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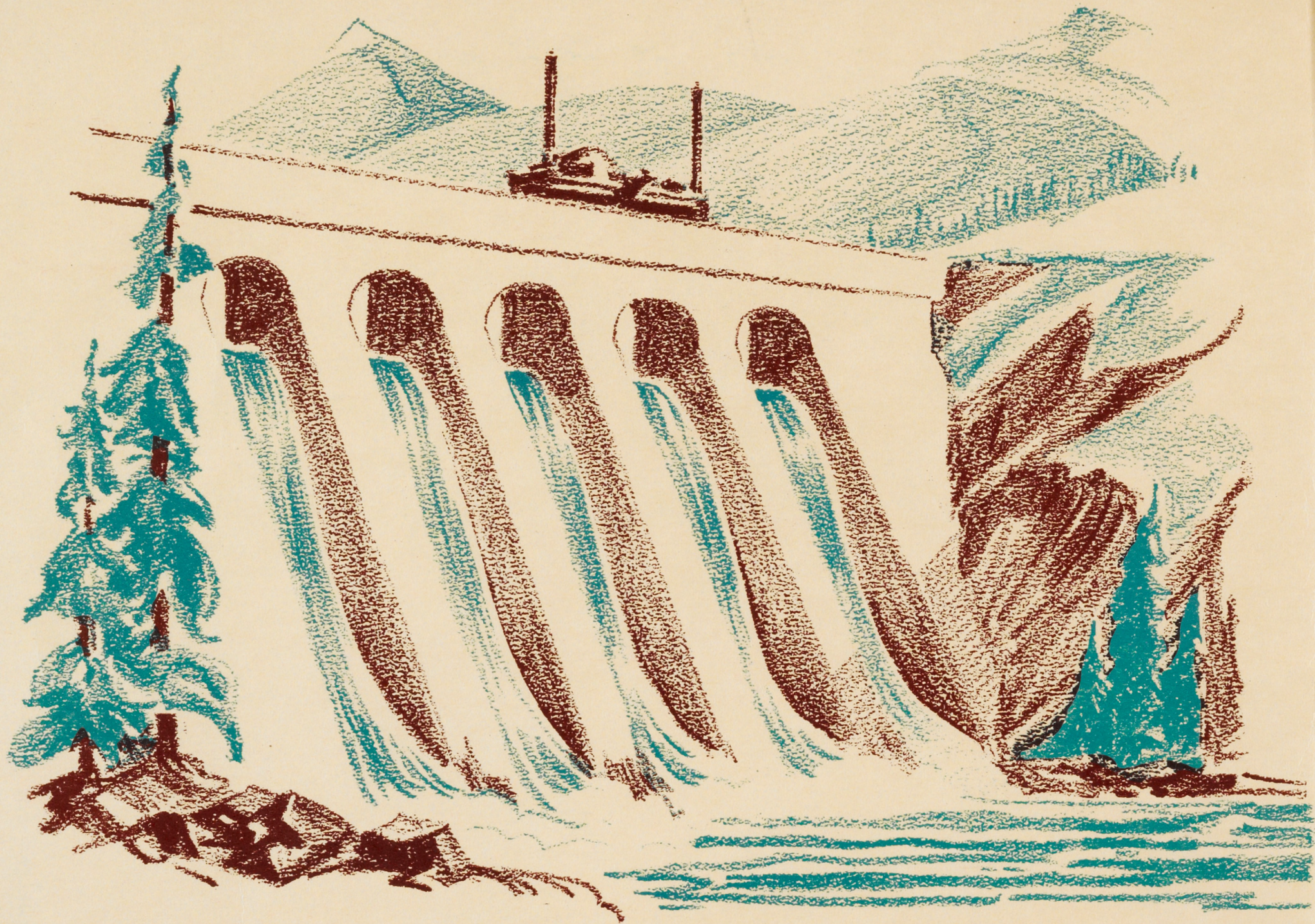
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GREEN ACRES

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IRRIGATION...

OPENING *a* NEW ERA *for*





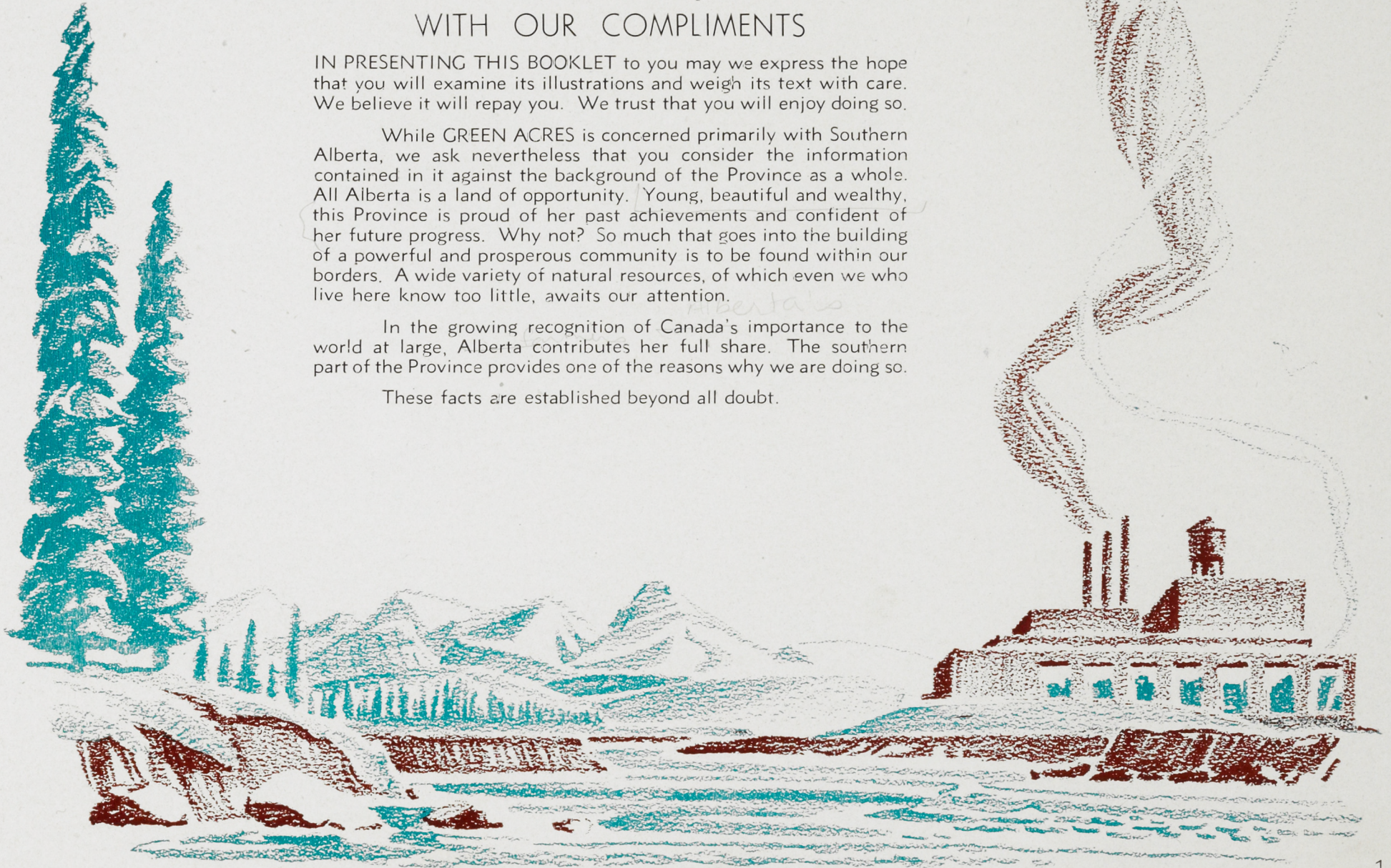
WITH OUR COMPLIMENTS

IN PRESENTING THIS BOOKLET to you may we express the hope that you will examine its illustrations and weigh its text with care. We believe it will repay you. We trust that you will enjoy doing so.

While GREEN ACRES is concerned primarily with Southern Alberta, we ask nevertheless that you consider the information contained in it against the background of the Province as a whole. All Alberta is a land of opportunity. Young, beautiful and wealthy, this Province is proud of her past achievements and confident of her future progress. Why not? So much that goes into the building of a powerful and prosperous community is to be found within our borders. A wide variety of natural resources, of which even we who live here know too little, awaits our attention.

In the growing recognition of Canada's importance to the world at large, Alberta contributes her full share. The southern part of the Province provides one of the reasons why we are doing so.

These facts are established beyond all doubt.



TO THOSE WHO LED THE WAY

IF YOU HAD SEEN the short grass plains of Southern Alberta not so many years ago, you would have found a very different place than you find today. Most years the crops, on which the settlers had built such high hopes, were dried out through lack of rain. Soil-drifting was a tremendous problem, covering fences and machinery in many places. Black blizzards brought night at high noon. The general picture was far from encouraging.

But among those settlers were men of vision. They looked at their holdings, and realized that the first need to make them fertile was water. Not far away they saw the rivers flowing through the valleys and they believed it was practical to bring that water to their thirsty fields.

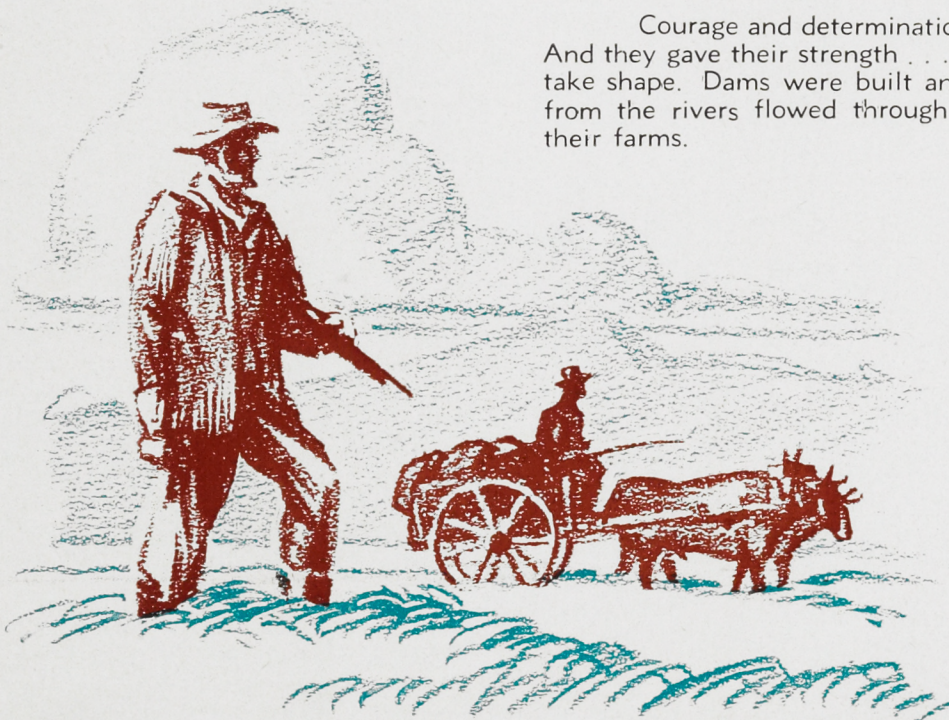
Such a plan took vision, but it took more. Money, and determination, and courage were needed. Years of toil would have to be expended to bring it about.

Courage and determination those pioneers had. Plenty of it. And they gave their strength . . . until finally they saw their dream take shape. Dams were built and canals were dug and the water from the rivers flowed through them, bringing renewed life for their farms.

Soon the crops flourished regardless of the rain; trees were planted; comfortable homes were built; new factories were established; and hustling little communities began to smile again.

This transformation didn't come overnight. There were setbacks and discouragements and early skepticism, but always these were met with the same unwavering faith of those who knew they were right. They made their vision a reality, and now it is ours to enjoy and to pass on to our children as a rich inheritance for them, for our Province and our nation.

Some of these men to whom we owe so much have passed on, but many others are still with us. To them all we proudly dedicate this booklet.



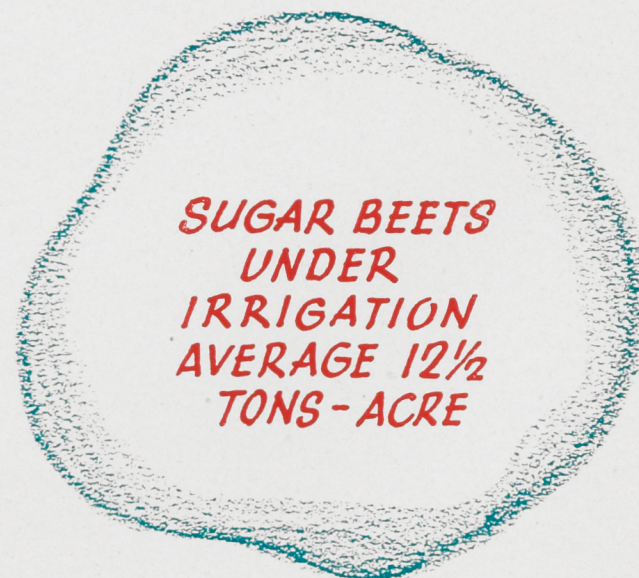


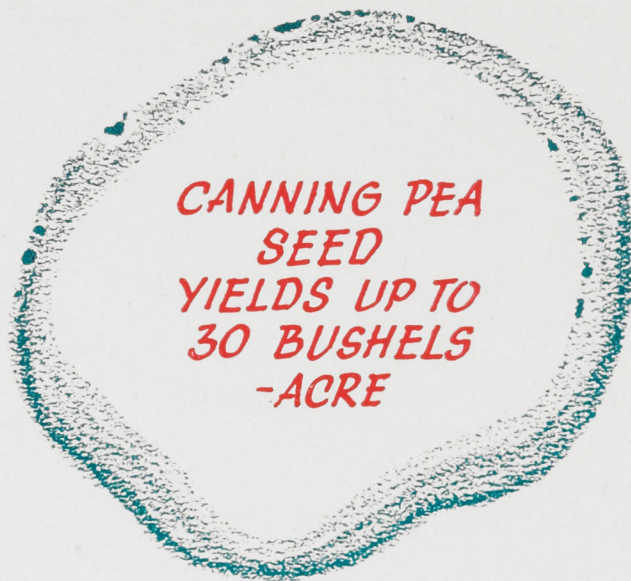


FROM THEN TILL NOW

IN THE GREAT CENTRAL PLAINS of Western Canada there is a vast rough triangle of land on which the annual rainfall averages from eight to sixteen inches. Extending from Coutts through Hanna in Alberta, thence to Saskatoon in Saskatchewan and finally to the International Boundary in Southwestern Manitoba, this is known as the Palliser Triangle, after the British Army Captain who from 1857 to 1860 explored the region to determine its suitability for agriculture. Captain Palliser's decision was that this triangle was unsuited for agricultural settlement, but in the years that followed, his advice went unregarded by many thousands of settlers who, encouraged by various land agencies and the Dominion Government homestead laws, flocked into the plains.

In large part Palliser's judgment has been justified. For during the past thirty years, at least twenty crop failures have broken many of the settlers, causing whole areas to be abandoned and a lifetime of toil to be lost. There was only one answer to the problem. If crops could not be raised with natural rainfall, the essential moisture would have to be supplied by artificial methods. This meant irrigation, and in that part of the triangle comprising Southern Alberta we find the solution completely successful.



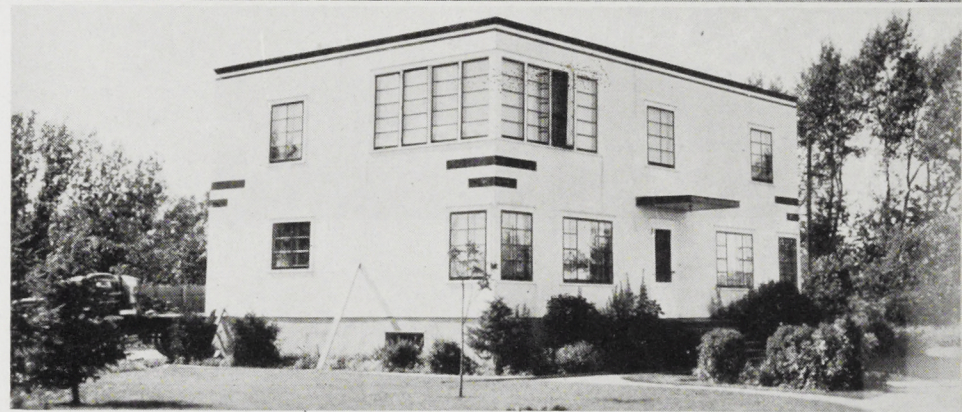
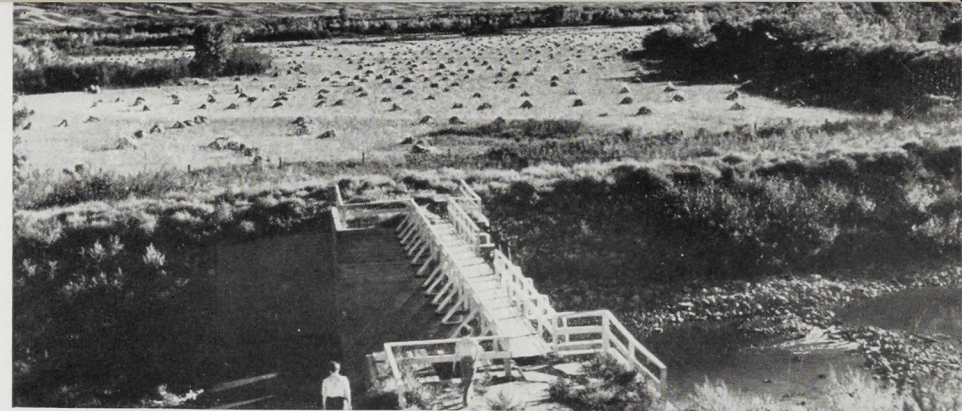


The story of irrigation in Southern Alberta began in 1878, when John Glenn took water from Fish Creek near Calgary and spread it over his hay meadow. Later two American squatters tapped Beaver Creek for the same purpose, and still later, in 1891 John Quirk irrigated several hundred acres near Millarville from the waters of Sheep Creek.

All these early experiments were in the long grass country of the foothills, and because the seasonal rainfall of these areas was enough to get along on without the aid of irrigation, the real value of water in the ditch was not fully appreciated. This came later when the long brown acres east of Lethbridge were turned green again with the application of irrigation water.

In 1887 a small Mormon settlement was started on Lees Creek. These sturdy folk, aware of the advantages of irrigation in their native Utah, were helpful in drawing attention to its possibilities in Southern Alberta.

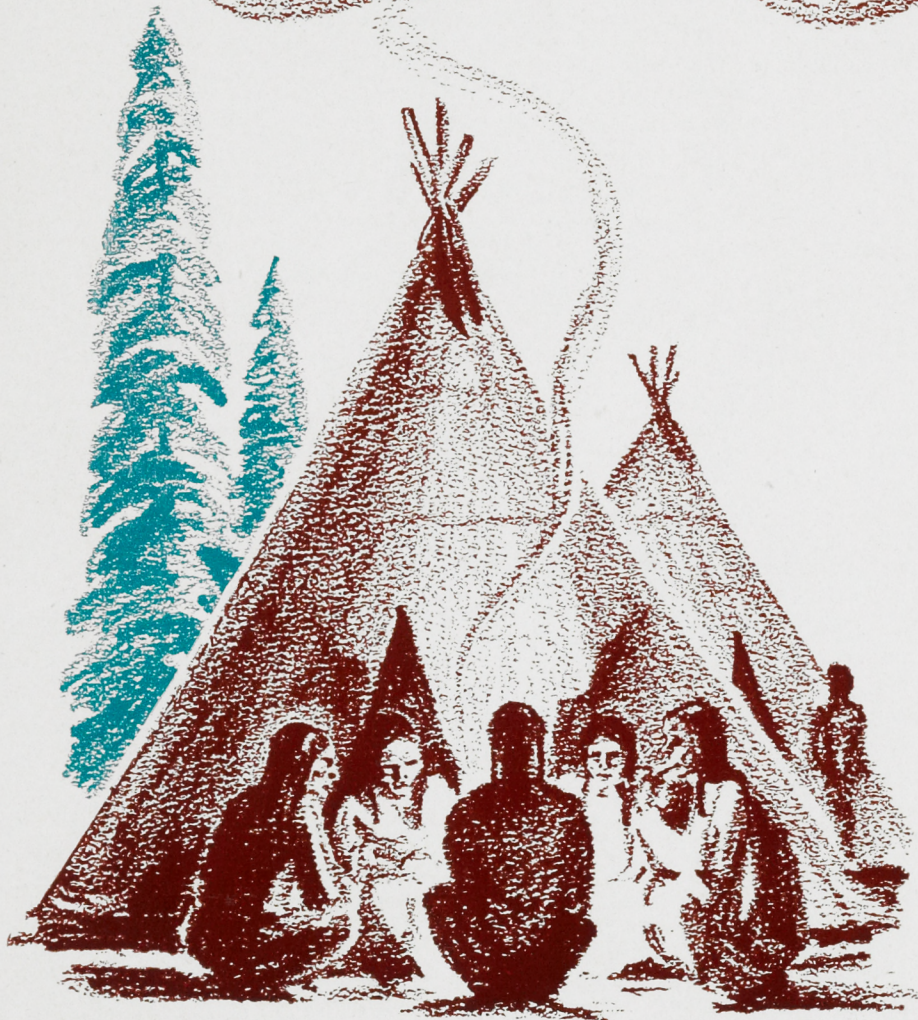
Another ten years passed. In 1897 help of the Dominion Government was sought and with the encouragement of Sir Clifford Sifton, then Minister of the Interior, it was readily given. In that same year Charles A. Magrath, D.L.S., on behalf of the Galt interests, approached the heads of the Mormon church in Utah, and an agreement was reached by which its members would construct irrigation canals, accepting payment half in cash and half in land at \$3.00 per acre.



**ALBERTA HAS
525,000 ACRES
OF IRRIGATED
LAND**

**BEEF CATTLE
EAT 80 POUNDS
OF BEET PULP
DAILY**

**AVERAGE
INCOME ON
IRRIGATED LAND
IS \$40 ACRE**



Work began in earnest the next year with the construction of the headworks of the canal near Cardston . . . and just after the turn of the century water was being spread over the farms in the Magrath, Raymond and Stirling districts, the original Alberta Railway and Irrigation Company project of 100,000 acres.

Then came the first sugar factory in Canada. That was in 1902 when the late Jesse Knight built a plant at Raymond.

About this same time the development of irrigation was set back for another ten years when it was discovered that wheat could be grown successfully on what had once been considered ranching country. However, the drought of 1910 raised some doubts as to the wisdom of trying to grow wheat in dry areas, and this served to turn attention back to irrigation. More dry years followed, and finally, with the support of the Alberta Government, the Lethbridge Northern Irrigation District of 105,000 acres was formed.

Sugar beets again entered the picture in 1925. Knight's original factory at Raymond had been forced to close, but in 1925 the Utah-Idaho Company built a new plant which was later acquired by the Canadian Sugar Factories, Limited, one of the interests of the Rogers family of British Columbia.

**60 BUSHEL
WHEAT YIELDS
OFTEN FOLLOW
SUGAR BEETS**

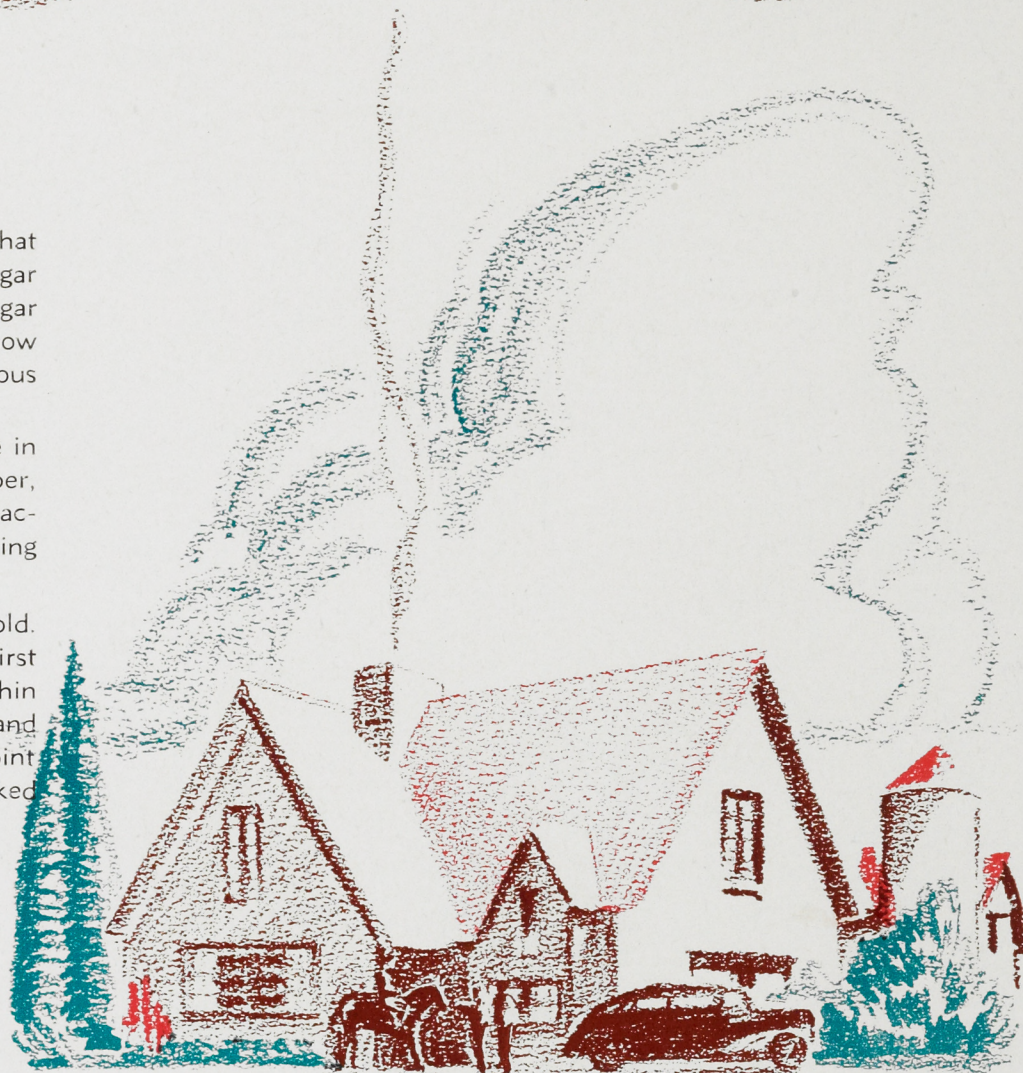
**DRIED BEET
PULP IS TOPS AS
DAIRY CATTLE
FEED**

**6½ OUNCES
OF SUGAR FROM
AVERAGE 2½ LB
SUGAR BEET**

Although its future was often obscure, it cannot be said that irrigation in Southern Alberta was ever in danger of failing. Sugar led it to success, and, with an ever-increasing acreage in beets, sugar beet tops, pulp and molasses, all by-products of the industry, now provide the basis of a livestock finishing industry on a tremendous scale.

A second sugar factory was established at Picture Butte in 1936. Next came Broder Canning Company's first plant at Taber, and later a second factory at Lethbridge. Other canneries and factories have followed until now the irrigation districts are becoming known as "the food basket of Canada."

Year by year the epic of the South continues to unfold. Although it is nearly seven decades since John Glenn dug the first irrigation ditch, the great bulk of the development has come within the past twenty-five years. In that period, men of courage and vision have proven that John Palliser overlooked one important point when he condemned the great Plains for agriculture. He overlooked the magic of irrigation.







WHAT IRRIGATION MEANS

WHAT DO YOU THINK OF when someone speaks of irrigation? Maybe it's an imposing dam that checks the headlong course of a river and causes it to swell out into a placid lake. Maybe you think of canals that follow the highways mile after mile after mile. Or it may be broad fields of sugar beets, corn, peas and other vegetables that cause once-parched wasteland to groan with the weight of its burden. Irrigation means all this; but it means much more. It means progress. And permanency. And stability. It means hard work, but with independence and security as its reward. It means greater opportunities for all who love the soil, and for industrialists as well.

In Canada, irrigation means Southern Alberta.

The irrigated areas of the Province lie east and south of the city of Calgary and extend south almost to the International Boundary. This vast block of land contains well over half a million acres with an additional 420,000 acres which can be irrigated from the existing canals. Today there are approximately sixty-two hun-

dred farms which enjoy the advantages of irrigation. That many farmers have conquered drought in Southern Alberta. Whether it rains or not, their crops flourish, assuring of rich returns for their work. What is the result? During the depression of the nineteen thirties, the people of the Lethbridge district enjoyed the highest level of retail trade per capita of any community in the whole of Canada. That simple fact in itself provides overwhelming evidence of what irrigation means to Southern Alberta.

But speaking of facts, let us face another one. The progress and the development of irrigation in Alberta, impressive as it is, has not, on the basis of acreage, reached the half-way mark. Another million acres are waiting for the water, and when it is applied, this



**POTATO YIELD
RECORD.. 825
BUSHELS.. UNDER
IRRIGATION**

area will provide an abundant life for another ten thousand farm families.

Southern Alberta wants people. She needs them. She can afford them.

Now a word about density of population. In the dry farming areas of Alberta the population averages 3.5 persons per square mile. In those areas partly under irrigation the average density increases to 12.7 persons per square mile, or more than three times the dry area figure. In the more fully developed districts of Alberta, population averages jump from eight to fourteen times that of the dry farming areas.

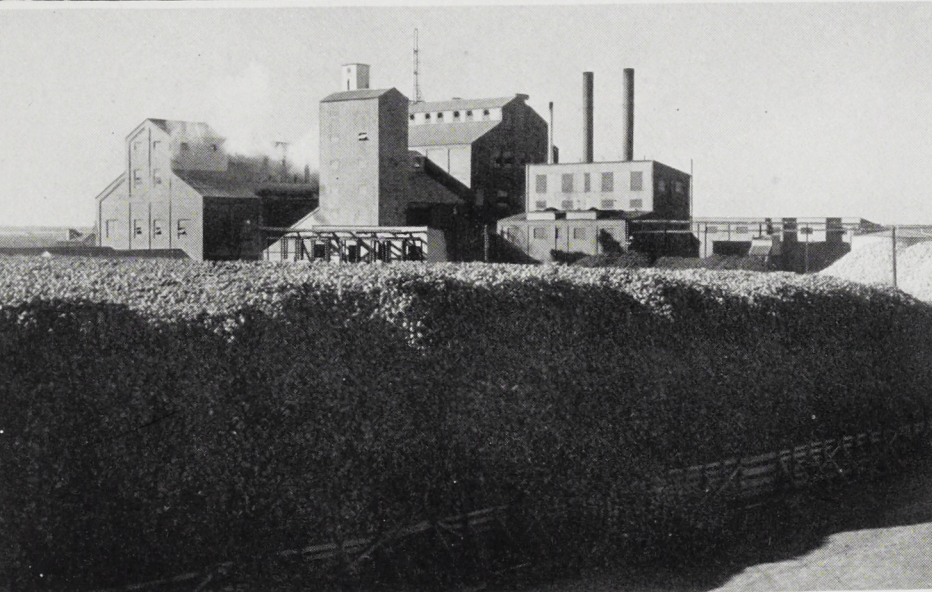
And in some of the irrigated districts of the United States it rises as high as 183 persons to the square mile.

**ALBERTA SUN
GIVES CANNING
VEGETABLES
HIGH FLAVOR**





**RANGE CATTLE,
LAMBS... FATTEN
ON PRODUCTS
OF IRRIGATION**



These figures show what can be expected with the passing of time. Now let's go one step further. You have an idea how much it takes to equip a farm and maintain a home. Whatever figure you assume, multiply it by ten thousand farms we mentioned a moment ago, and you have the value of the new market for processed goods, farm machinery, clothing, building supplies and all the rest that goes into modern living.

Yes, ladies and gentlemen, golden opportunities abound in Southern Alberta. You and your families will find them on the land with its flowing water, and in the progressive cities and towns of the South with their modern factories, their clean shady streets and their comfortable homes.

The opportunities are there. They await your grasp.



**FIVE TONS OF
CANNING BEANS
PER ACRE UNDER
IRRIGATION**

YES . . . THERE ARE ADVANTAGES!

WE CAN THINK of no good reason why the value of irrigation needs to be stressed. That has been proven abundantly from experience stretching over the past many years. At this point then we shall merely record some of the proof of that experience. To begin with let's take some nine thousand acres in the irrigated district near Taber from which, in 1944, the farmers of this area harvested sugar beets worth \$1,003,000. That's \$111.50 gross return per acre. Not many years ago this same land was used as cattle range, requiring forty acres to make one head of beef gain 250 pounds weight for the season. At the wartime price for grass fed beef of 10 cents per pound it follows that every forty acres gave a return of \$25.00 or a mere 62½ cents per acre.

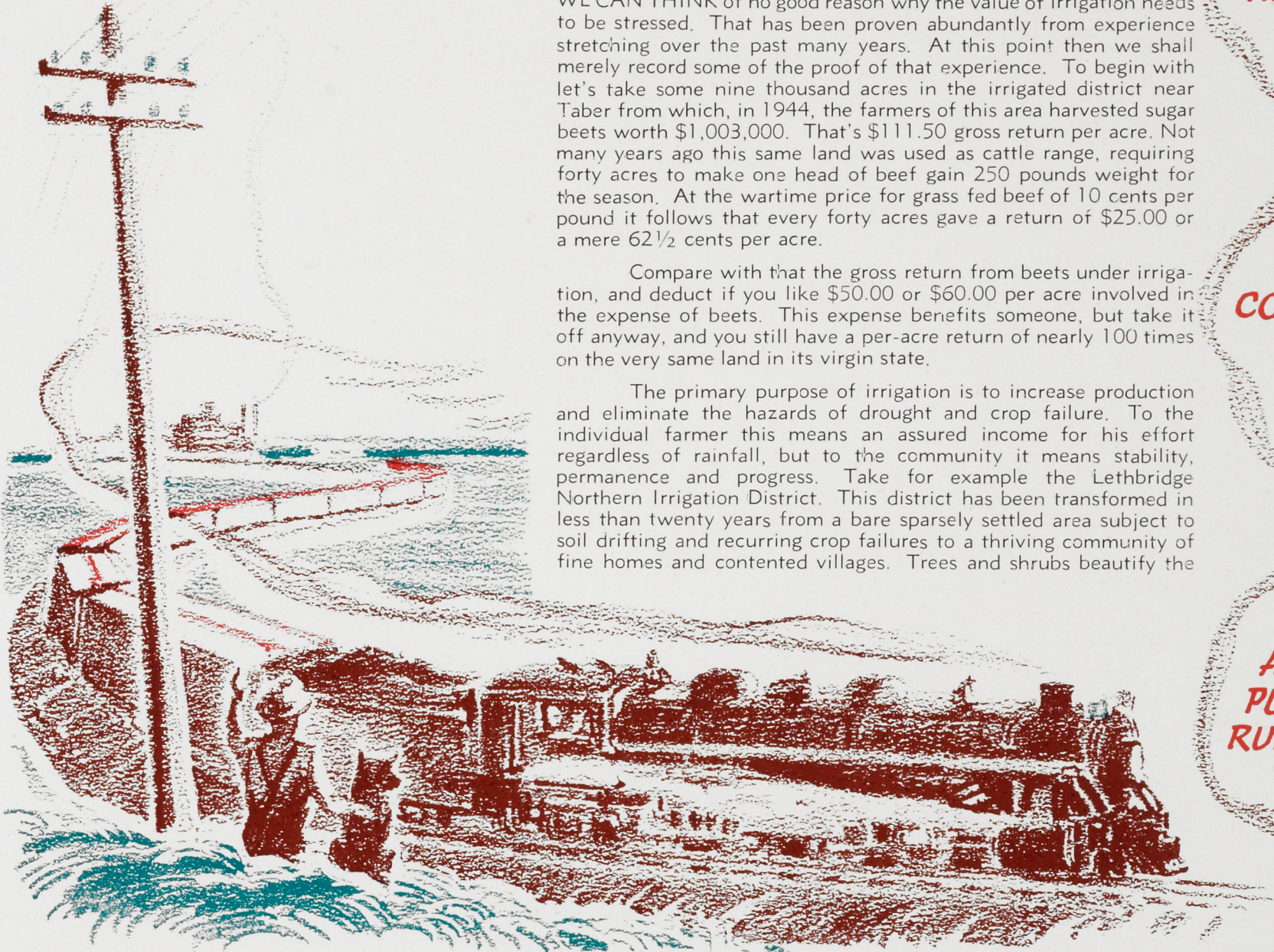
Compare with that the gross return from beets under irrigation, and deduct if you like \$50.00 or \$60.00 per acre involved in the expense of beets. This expense benefits someone, but take it off anyway, and you still have a per-acre return of nearly 100 times on the very same land in its virgin state.

The primary purpose of irrigation is to increase production and eliminate the hazards of drought and crop failure. To the individual farmer this means an assured income for his effort regardless of rainfall, but to the community it means stability, permanence and progress. Take for example the Lethbridge Northern Irrigation District. This district has been transformed in less than twenty years from a bare sparsely settled area subject to soil drifting and recurring crop failures to a thriving community of fine homes and contented villages. Trees and shrubs beautify the

**CARROTS
FOR CANNING
YIELD UP TO
20 TONS
-ACRE**

**CANNING
CORN AVERAGE
YIELD IS
5 TONS
-ACRE**

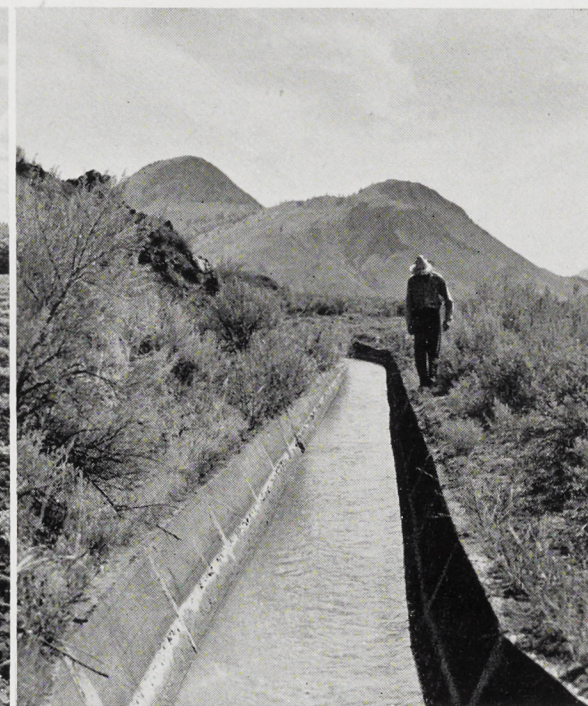
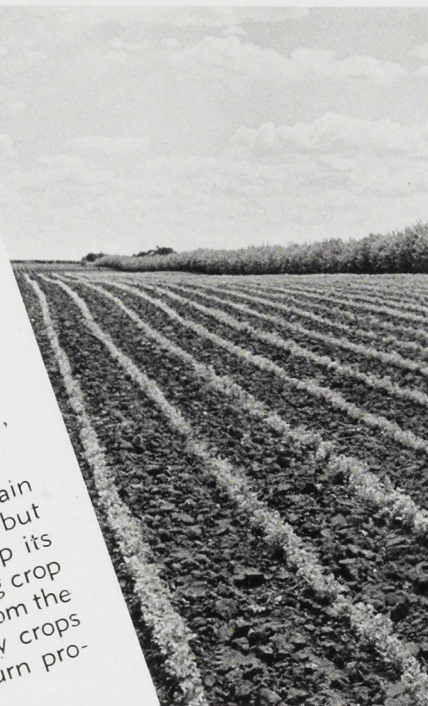
**SOUTH
ALBERTA
PUMPKINS
RUN 20 TONS
-ACRE**

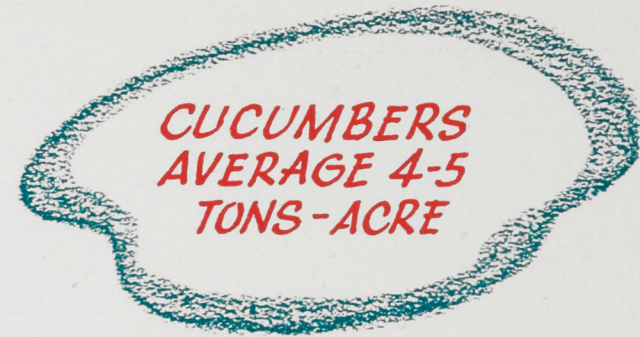


countryside. Flowers and fruit and vegetables grow abundantly. Fields are lush with their crops. The residents have profitable work to do and money to spend and things to enjoy where there was a bare existence not so long ago . . . all because of irrigation. And as a result they are making a substantial contribution to the needs of the world and to the prosperity of the nation.

In that same period the population of the district has grown from 1,500 to 10,000 persons. Educational facilities have been provided; electrical power has been made available; better roads and modern highways have been built; and railway facilities have been increased. Here is a permanent heritage for Canadians, and what has been accomplished in the Lethbridge Northern applies in equal measure to other irrigation districts in the South. More than that the achievements of these pioneers mark the way for new ventures with less difficulty and greater speed.

Then there's the question of soil fertility. Straight grain farming, even alternating with fallow, tends to deplete fertility, but rotation of crops made possible by irrigation actually builds up its richness, so there will never be any danger of the soil becoming poor as it has, in some of the older areas of the west. Apart from the advantages of rotation, there is the fortunate cycle of heavy crops providing by-products used to fatten livestock, which in turn provides natural fertilizer so essential for enriching the soil.

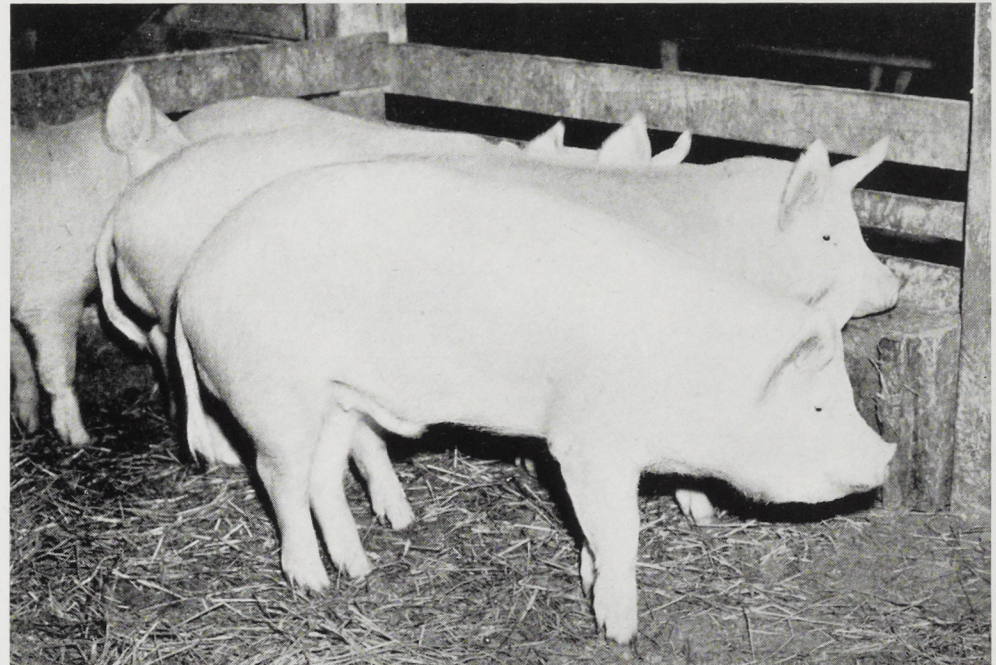




Speaking of fattening livestock, this is one of the major industries in the irrigation country. Each year tens of thousands of sheep and cattle are finished on beet pulp, molasses and other by-products of the main crops. This means choicest carcasses for the meat-hungry peoples of the world, and to the farmers it means a profitable industry in the winter season after the main crop is harvested.

There are many advantages to irrigation. Let's not forget one of its greatest: That of increasing the carrying capacity of the land. We shall have something more to say about density of population but here we shall point out that in dry farming areas the population is dwindling, while in irrigated districts it is increasing steadily. Again, specialty crops under the ditch result in smaller farms and more help, not to mention a higher standard of living throughout. Think, too, of the effect of these developments on the manufacturers who supply various items of farm machinery, household goods and clothing reaching a total of many millions of dollars year after year, and you have another reason why the whole nation is watching irrigation developments with interest.

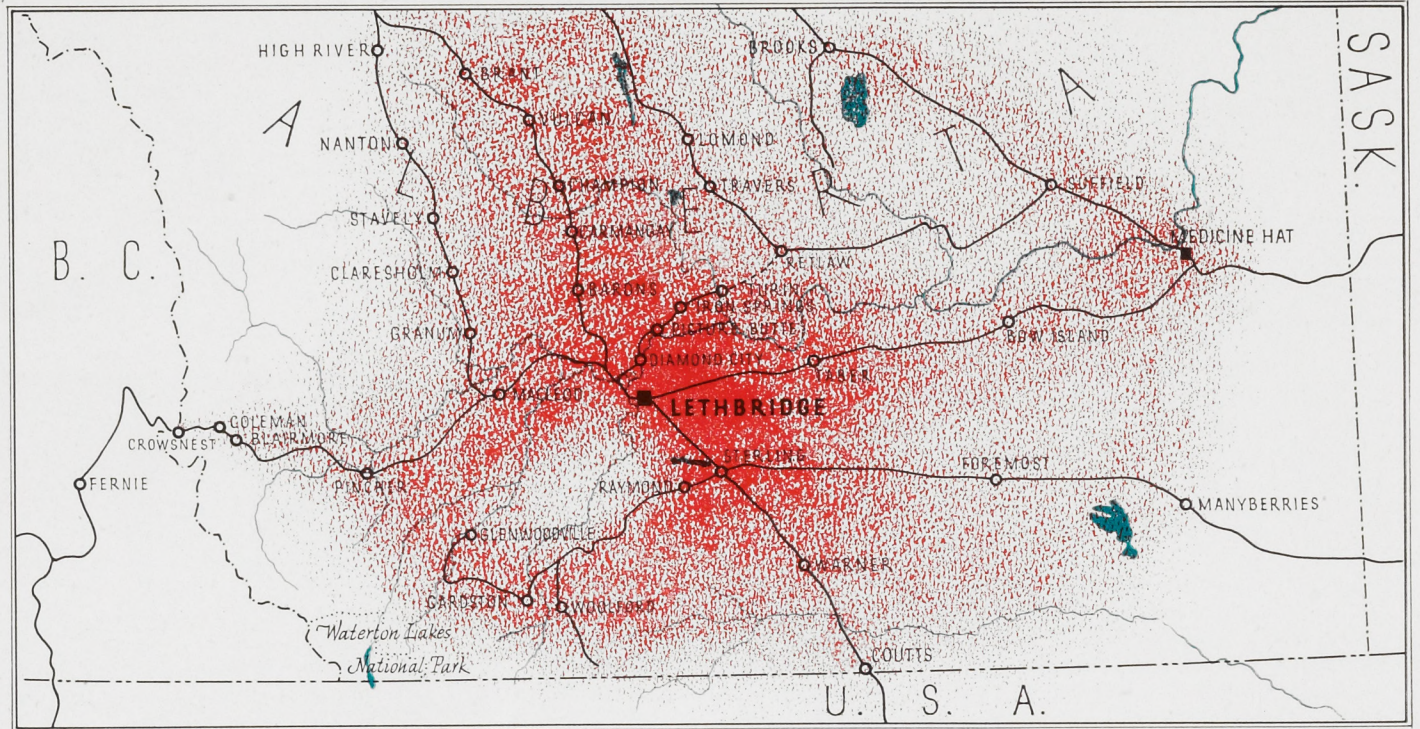
Now what has all this to do with you? We'll come straight to the point. Southern Alberta needs people. She needs more industries, packing plants, canneries, woollen mills, garment factories, tanneries, and a host of others. More than 250,000 acres are coming under irrigation with the completion of work already begun. Another




three or four hundred thousand acres will be brought under the ditch by projects now in operation whenever the demand warrants it. An additional half million Alberta acres will be irrigated within the next five to ten years.

The development of irrigation in Alberta has only well begun. Right at the moment we are witnessing the birth of a new era of opportunity in this Province surpassing the old homestead land rush and the coming of the railroads. For where the early stampedes were filled with uncertainty, today's progress is sound, clear-eyed and assured. The advantages of irrigation mentioned in this booklet provide that assurance.

A new era of opportunity awaits you on the GREEN ACRES of sunny Southern Alberta.





PLANS AND POPULATION

ONE OF THE GREATEST advantages of irrigation is that it increases the carrying capacity of the land. This means that the same acreage can and will raise enough produce to support more people. It follows that the density of population of irrigated districts increases as the land is more fully utilized. More than that, because the water removes the hazards of farming due to drought, the standard of living which the residents enjoy is substantially higher than under any other circumstances.

This is borne out by statistics of irrigation developments. For example, some Alberta irrigation in districts where settlement

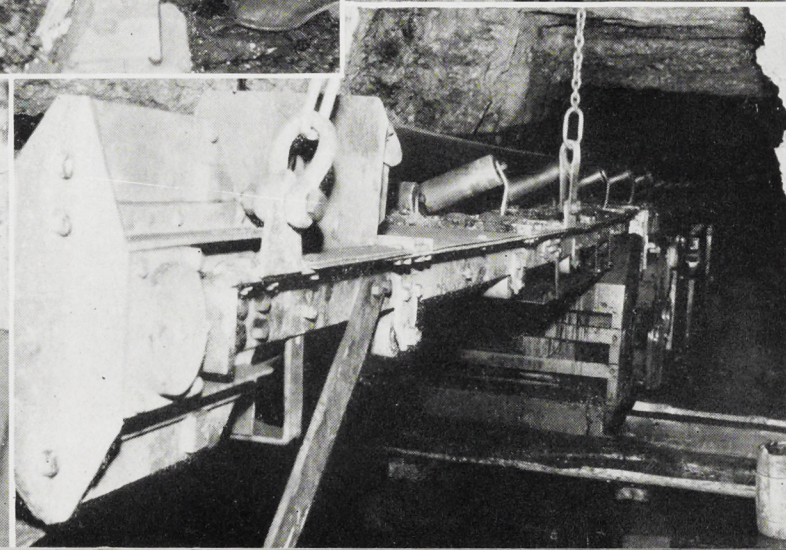
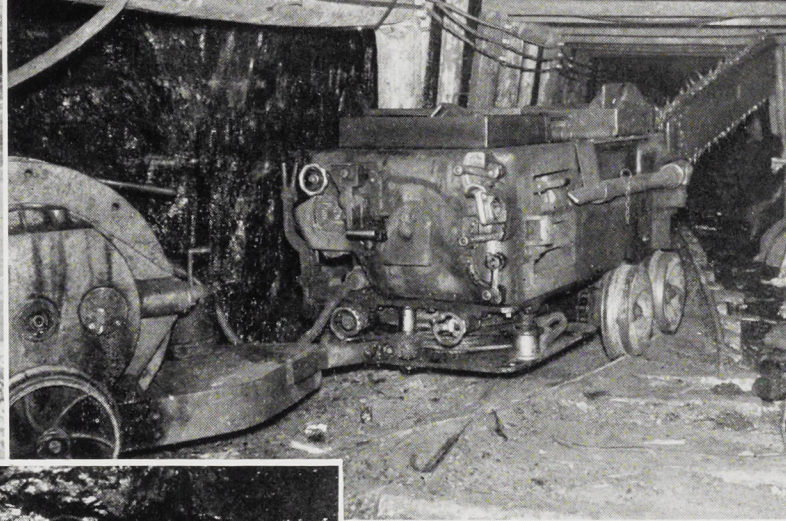


is incomplete the land supports more than 42 persons per square mile. Population increases in other districts to 143 persons for the same area. And in the fully developed irrigation areas of the United States it goes as high as 183 persons per square mile.

On this same scale the irrigated land of Southern Alberta will support an additional 150,000 persons. Obviously such an increase will mean more produce from the "food basket of the West". It will mean a greater volume of business for the west and the east. It will mean progress for the entire nation.

Albertans are confident of the future. Such resources as our irrigable farms make us so.





POWER FOR INDUSTRY

WHILE THIS BOOKLET deals principally with the possibilities for the further extension of irrigation and the need for industrialization to make the best use of the products of the green acres under the ditch, let us recall a bit of history to indicate that South Alberta is underlaid with the power and the energy which secondary industries require.

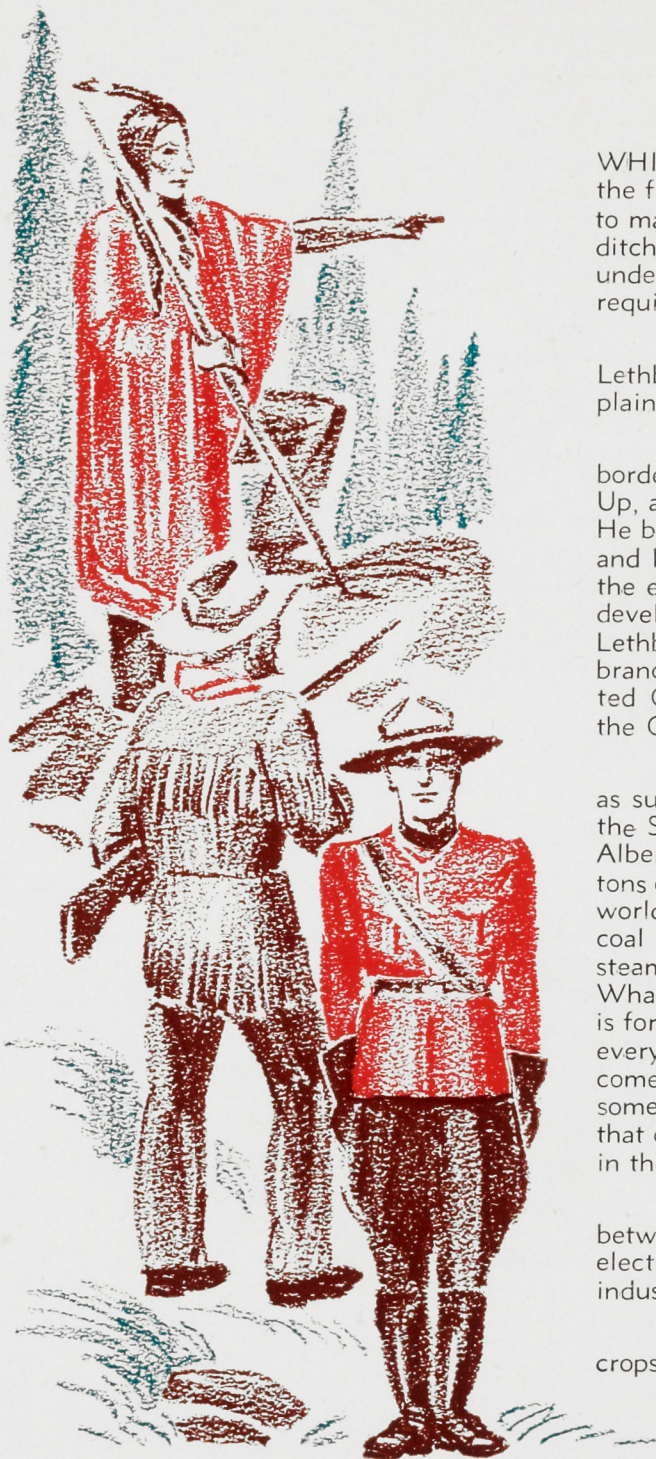
Coal brought the first industrial development to the city of Lethbridge. Lethbridge is built on coal. Much of South Alberta's plains and mountains is underlaid with coal.

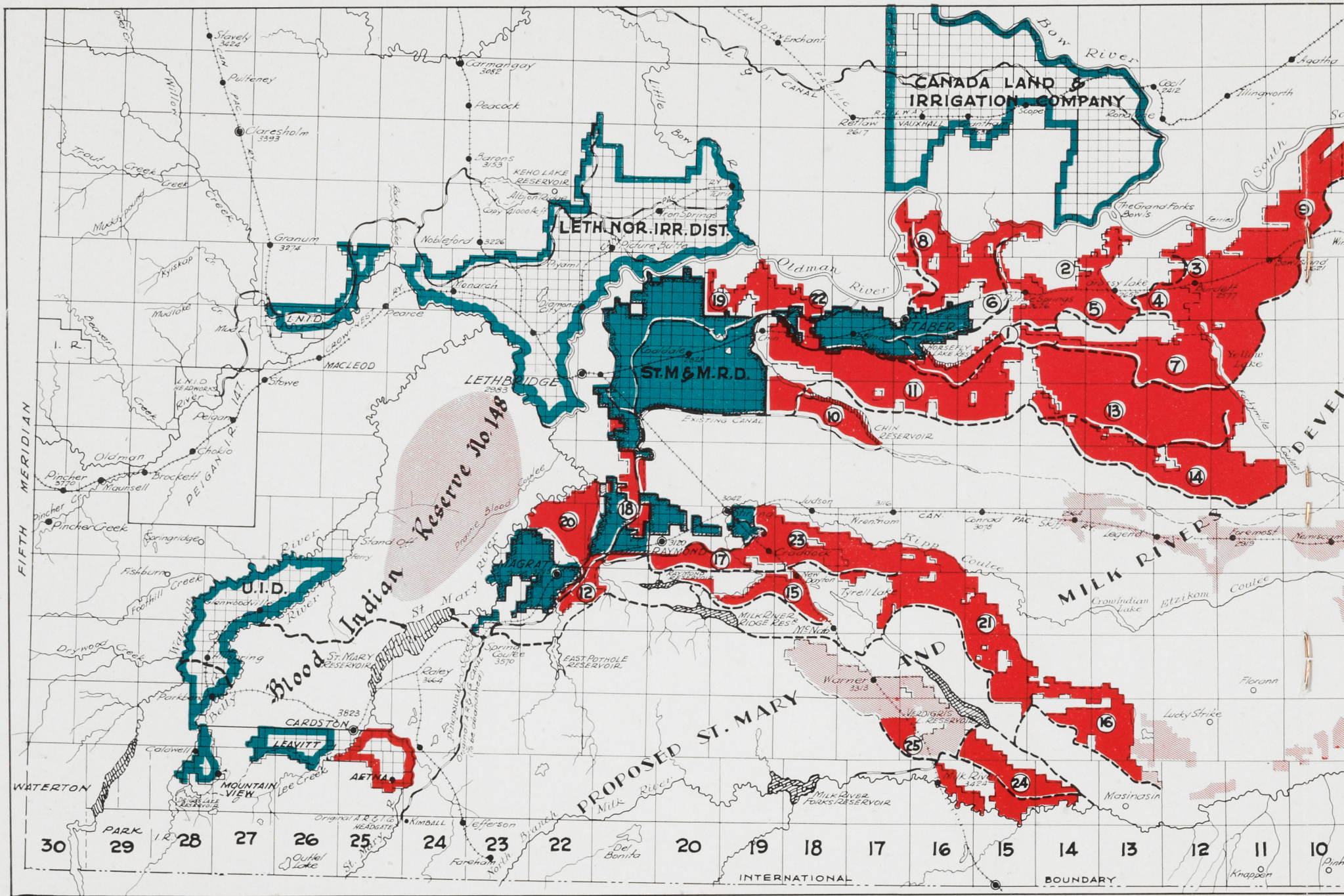
In 1870 Nicholas Sheran, a Civil War veteran, crossed the border from Montana and found coal outcroppings at Fort Whoop-Up, a fur-trading post in the heart of the Blackfeet Indian territory. He began mining it, hauling it to Fort Benton on the Missouri River and later to the Mounted Police headquarters at Fort Macleod. In the early eighties Sir Alexander Galt and Elliott T. Galt began the development of the first commercial coal mine in Alberta in the Lethbridge area. To get the coal to market they built railway branches from Lethbridge to Medicine Hat on the newly constructed Canadian Pacific Railway, and from Lethbridge to Shelby on the Great Northern Railway in Montana.

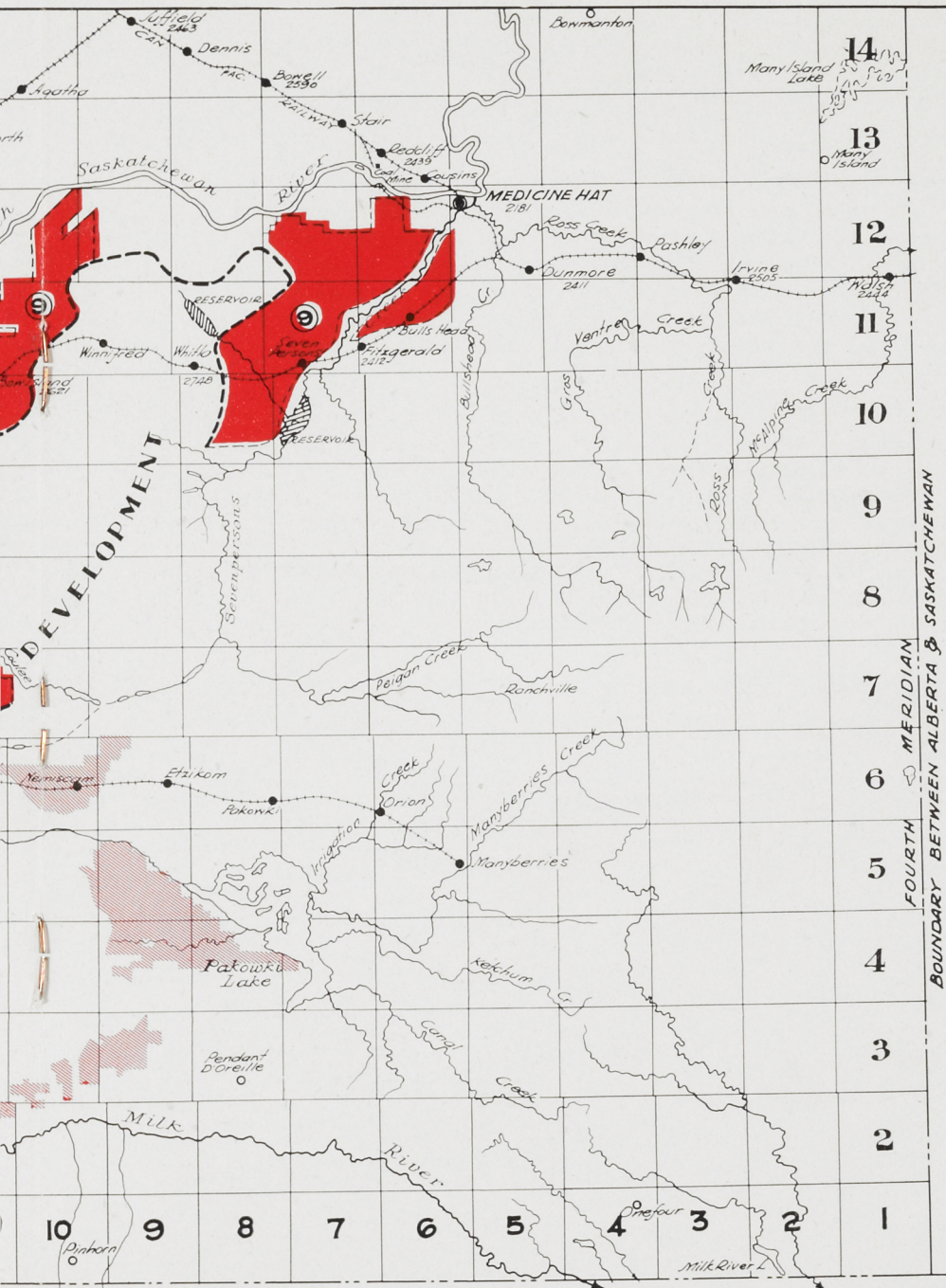
For building the railways the Galts secured grants of land as subsidies. To make the land produce they brought water from the St. Mary River. That was the start of large scale irrigation in Alberta. It stemmed from coal. The coal is still there, billions of tons of it. Alberta has 12 per cent of the known coal reserves of the world. Coal is energy. Coal is power for industries. South Alberta's coal varies from the lump coal used for domestic purposes to the steam and coking coal of the rich Crow's Nest Pass mining area. What coal will mean to the future development of Southern Alberta is for the industrialist to dream, but in these days of processing when everything from the finest perfumes and dyes to nylons and plastics come from coal, Nature's bounty to the south can mean a lot. And some day it will. One of Canada's leading geographers has written that one day the greatest population density in Canada will be found in the coal bearing area of South Alberta.

Besides coal the mountain streams rising in the glaciers between the Rocky Mountain peaks are being developed and hydro electric power lines are forming a grid across Southern Alberta for industries in the towns and cities and for rural electrification.

Coal and water power and an assured yield of specialized crops from irrigated land spell industrialization.







No	Tract	Acres
①	Horsefly Lake	8,586
②	North Grassy Lake	4,416
③	North Burdett	6,691
④	South Burdett	1,881
⑤	South Grassy Lake	3,024
⑥	Purple Springs	10,448
⑦	Yellow Lake	16,713
⑧	Big Bend	12,424
⑨	Medicine Hat	30,000
⑩	Lethbridge Coldate Ext.	24,173
⑪	East Chin.	39,184
⑫	South Magrath	5,224
⑬	North Forty Mile	33,190
⑭	South Forty Mile	17,610
⑮	South New Dayton	5,534
⑯	East Verdigris	11,112
⑰	Balancing	3,288
⑱	Raymond Extension	16,245
⑲	Cameron Ranch	7,596
⑳	Magrath Extension	23,570
㉑	Middle Coulee	20,797
㉒	Taber West	2,925
㉓	North New Dayton	21,988
㉔	Milk River	17,248
㉕	Warner (portion only)	1,133
Total New Land		345,000

Existing Districts	Acres
Taber Irrigation District	21,600
Raymond do do	15,178
Magrath do do	7,029
St. Mary & Milk R Develop ^t	76,193
Plus Total New Land	345,000
Total Ultimate Acreage	465,000

List of Reservoirs

St. Mary Reservoir	270,000	Acres
Chin.	150,000	" "
Verdigris	140,500	" "
Milk River Ridge	80,700	" "
Milk River Forks	31,000	" "
Waterton River	28,000	" "
Raymond	16,900	" "
East Pothole (CONSTRUCTED)	4,000	" "
Horsefly Lake	6,000	" "
Sevenpersons (2)	1,600	" "

LEGEND

EXISTING IRRIGATED AREAS

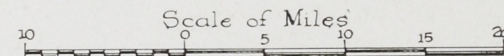
PROPOSED EXTENSIONS

TRACT NUMBERS (SEE TABLE)

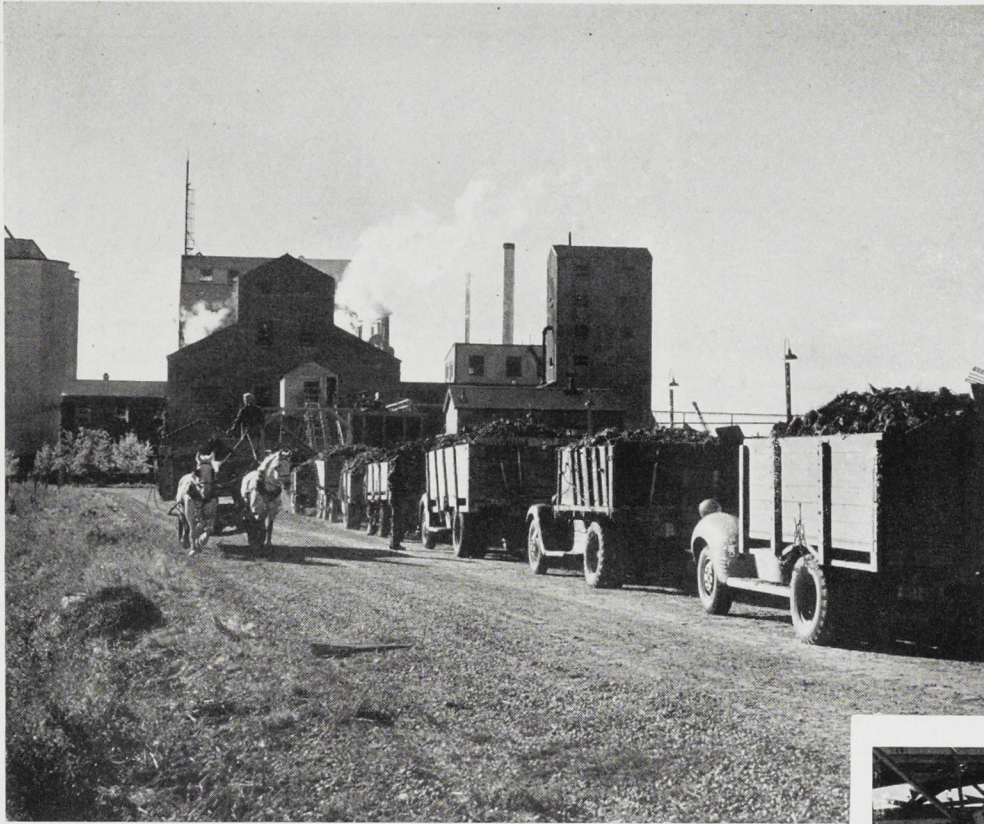
EXISTING CANALS

PROPOSED CANALS

PROPOSED RESERVOIRS



Note: The area shown as the St. Mary & Milk R. D. was originally known as the Lethbridge-Coldate Section of the A.R.C.I. Co., and now forms the nucleus of the larger development.



WESTERN SUGAR BOWL

IF YOU AREN'T HAPPY about the sugar shortage, don't blame the beet growers of Southern Alberta. Their efforts result in over 100,000,000 pounds of refined sugar being provided annually to Western consumers, and in 1946, they set a new record by producing 386,000 tons of beets.

Two factors have always limited the production of sugar beets. The first is a supply of moisture sufficient to assure proper growth. The second is the availability of labour necessary to produce the crop. In Southern Alberta the first factor is supplied by means of irrigation. And hand labour has been increased in recent years with the coming of Japanese from British Columbia.

New machinery which displaces the stoop labour problem is already being used in many districts of the south. Automatic thinning and harvesting machines have been developed which will help solve the labour factor and eventually result in greater acreages being seeded to beets. It is possible also that these machines will bring about a reduction in the cost of producing sugar.

Southern Alberta beet growers are paid a guaranteed price for their beets. This is stipulated in the contracts which they sign with the sugar companies each spring.



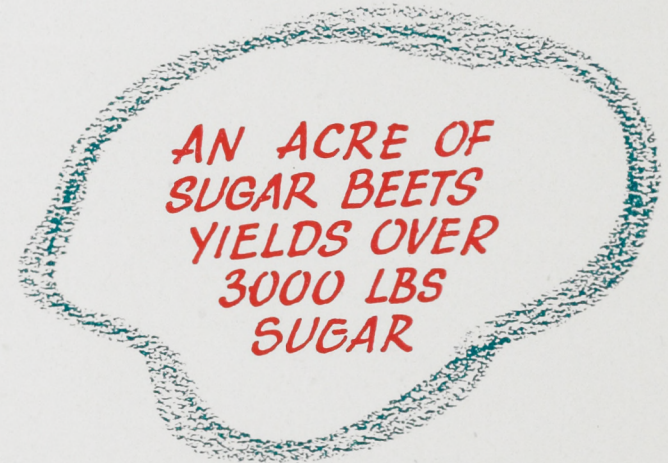
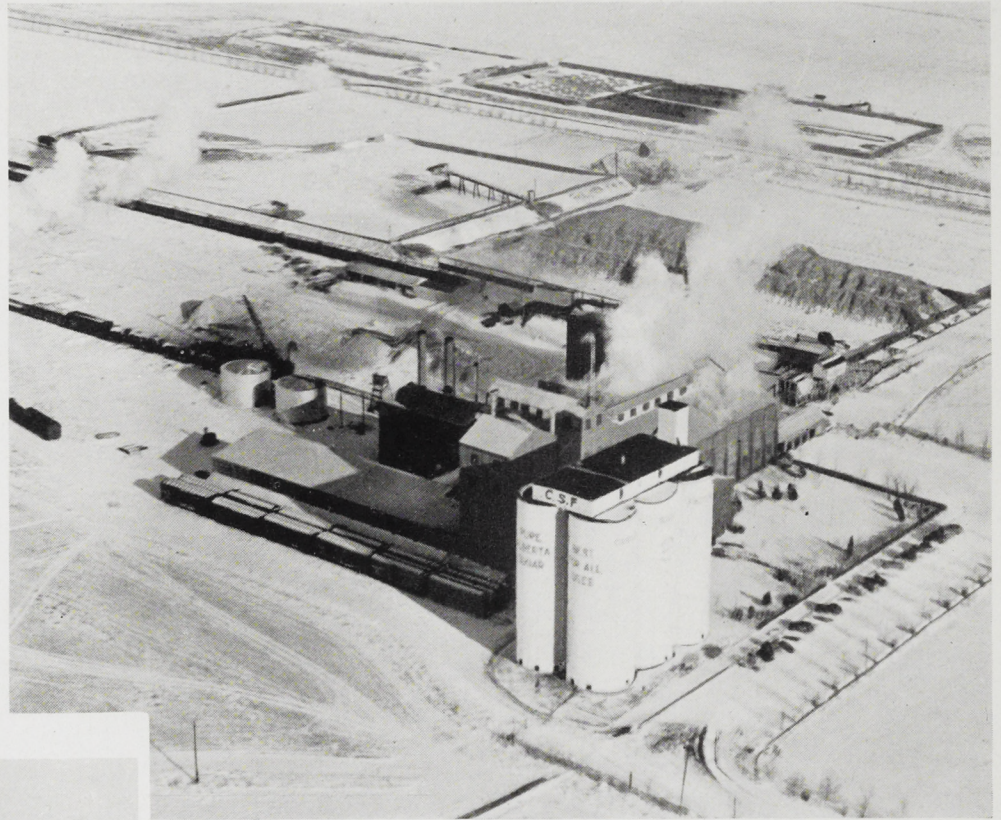
**ALFALFA GIVES
3½ TONS FROM
TWO CROPS
YEARLY**

The first step in beet-growing is to cultivate and level the acreage for which the farmer has contracted. Then comes "drilling" or seeding which must be done with extreme care, because of the furrow method of irrigation which is later employed. Chemical fertilizers are drilled in with the seed. The next step after the beets are up is to go over every acre and thin the beets, leaving only the strongest plants. Most of this, as we have said, still involves hand labour. The rows are cultivated several times during the season, and in addition irrigation water must be turned into the rows as often as is necessary.

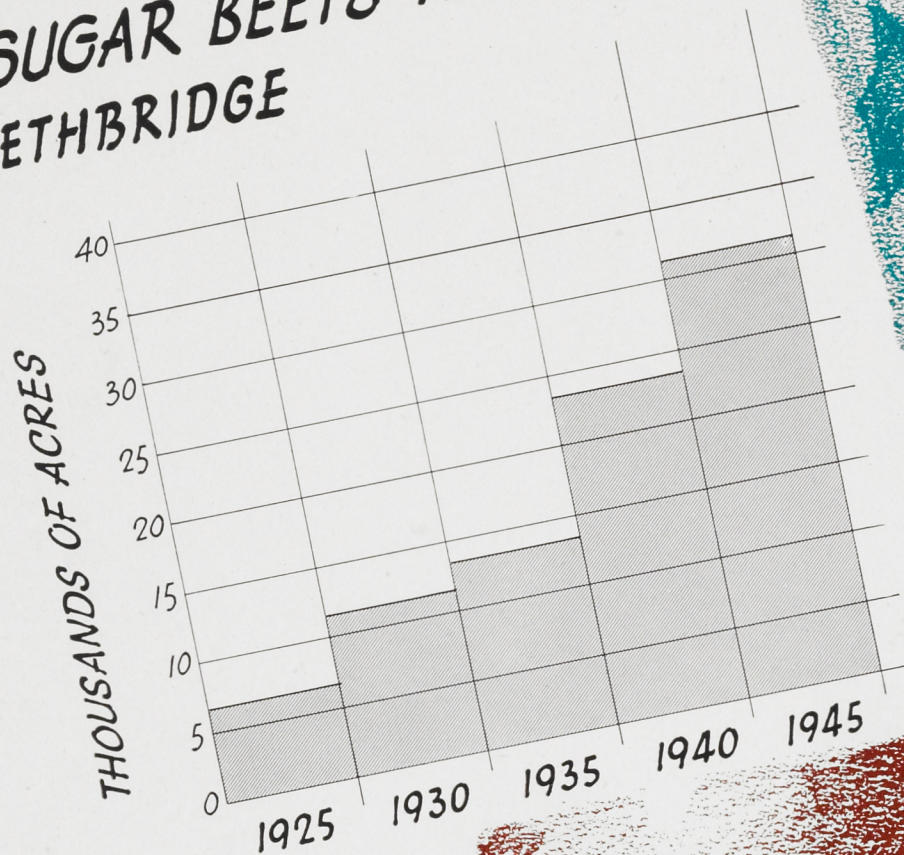
About the third week in September the beets are ready for harvest. At this stage they are silvery white giants measuring from three to eight inches across the crown, and from eight to fifteen inches long. Harvesting involves loosening by shallow plowing, and then the beets are pulled and "topped" by hand. After that they are loaded on trucks and hauled to the refineries where they are stacked in giant piles to await the refining processes in the factories.

The sugar beet plays an important part in the permanent development and progress of irrigated districts in Southern Alberta. Its stabilizing effect is felt far beyond the communities in which it is grown. Apart from helping to fill the sugar bowls of Canada, it provides the basis for another major industry in the south. We refer to livestock finishing.

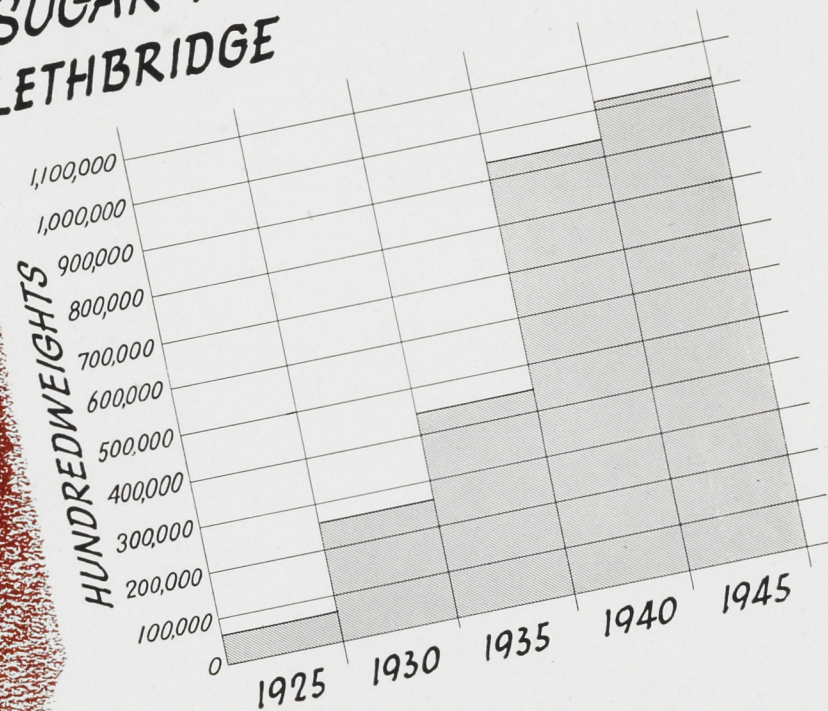
But that's another story.



SUGAR BEETS HARVESTED LETHBRIDGE



SUGAR PRODUCED LETHBRIDGE



HOW MUCH SUGAR ?

HOW MUCH can the beet sugar industry of Southern Alberta be extended? Canadians consume about 90 pounds of sugar per capita per annum, or about 1,000,000,000 pounds yearly.

Of this only some 200,000,000 pounds are produced from sugar beets—slightly over 100,000,000 pounds from the two factories of Canadian Sugar Factories, Limited, in the irrigated belt of South Alberta, the remainder from a plant in Manitoba, one in Southwestern Ontario and a small plant just getting underway in Quebec. The remainder of Canada's sugar needs come from cane sugar imported in its raw state from tropical countries. This means that only one pound in five of Canada's sugar needs is made in Canada from home-grown sugar beets.

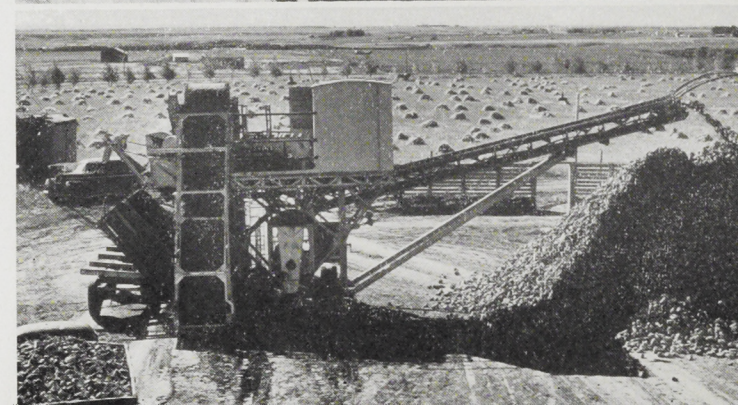
In the 21 years between the wars Great Britain developed her beet sugar industry so that, when the emergency came, she was able to supply her total sugar requirements from her sugar beet industry—a scanty supply but sufficient.

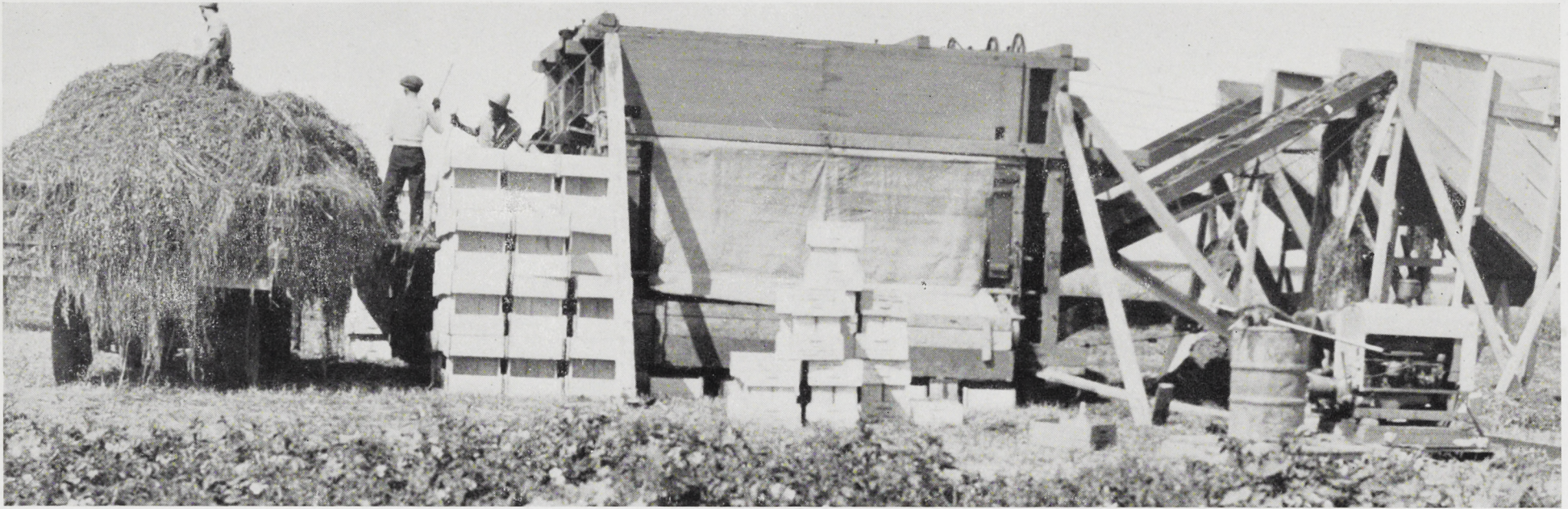
How far should Canada go in developing the beet sugar industry?

To supply 1,000,000,000 pounds of beet sugar annually would require five times the present domestic sugar development. It would require ten times the present output of 100,000,000 pounds yearly from the sugar beets grown on 30,000 acres of irrigated land in South Alberta. It would require 300,000 acres of the 12-ton per acre yield of South Alberta's irrigated land, and 20 factories such as those now operating at Raymond and Picture Butte in South Alberta.

South Albertans, naturally, would like to see Canada go as far as possible, consistent with geography and good world trade relations, to make the Dominion as self-sufficient in sugar as Britain did between the wars.

Announcement that Canadian Sugar Factories, Ltd., will build another sugar factory at Taber in 1947 to be ready for processing the 1948 crop, with the necessary expansion of the sugar beet acreage already arranged for, is considered by Albertans as a step in the right direction.





FROM FIELD TO TABLE

THERE'S SOMETHING in the climate, or the soil of that region lying south from Lethbridge and Medicine Hat to the border that produces some of the finest sugar beets in Canada. This also applies to such vegetables as peas, beans and corn, but it is the beets with which we shall concern ourselves at the moment.

This area is in the heart of the chinook wind belt, where almost without warning, the temperature changes from sub-zero to mild in the space of a few hours. This, as well as its altitude of from 2,500 to 3,000 feet, unquestionably has much to do with the quality of its produce. It has a longer frost-free period than any other section of the prairies and the greatest number of hours of sunshine. Its winter climate is mildest, its soil is strong, high in minerals. And of course, there's the magic of irrigation, bringing to the fields the right amount of water at the right season. All these factors combine to produce beets with an extremely high sugar content, and results in Alberta sugar being as white, sweet and pure as any refined sugar in the world.

But manufacturing methods have something to do with quality as well, and the processes used in Alberta's sugar factories bring out the best of their superior product.



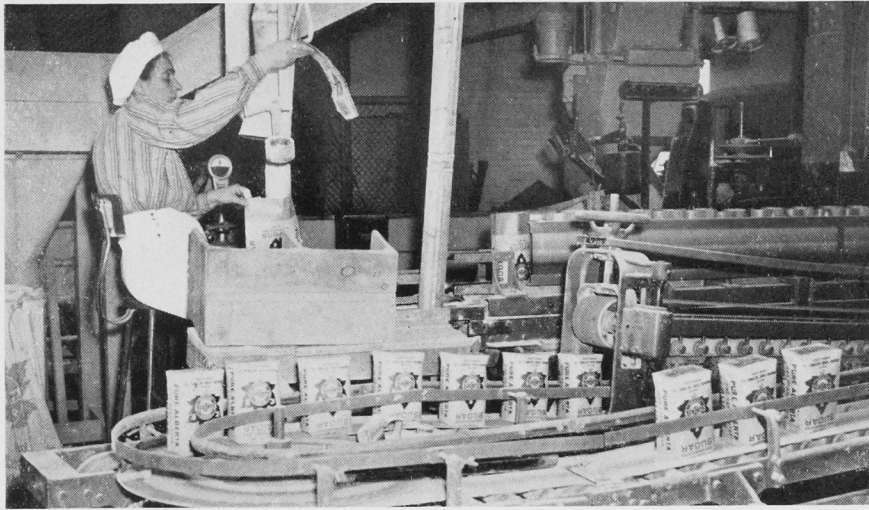
Starting with the huge storage piles brought to the factories by the growers, the beets are "flumed" or floated into the buildings by water. There they are first washed spotlessly clean in large washers, weighed, and then sliced by razor-sharp knives into long "noodles." These noodles go to diffusion tanks where hot water and pressure combine to soak the sugar from them, in principle much the same as steeping tea.

From the diffusion tanks the juice is pumped into carbonaters.

The next stage, crystallization, requires a high degree of skill and precise technical control. The thick dark syrup is boiled under vacuum until it becomes thicker and thicker, and then finally it begins to crystallize, much the same as candy "goes to sugar" if you boil it too long.

No yellow or brown sugars are recovered from beet sugar, but the molasses which coats the granules is removed by centrifugal action. For this process the crystallized sugar from the vacuum pans is placed in rotating drums or centrifugals in which a bronze screen rotates at a very high speed. The force thus generated literally whirls off the coating of molasses surrounding the crystals, leaving a warm, gleaming white mass of pure sugar.





AN INTEGRAL PART OF THE ECONOMY

IT IS NOT OUR DESIRE to encourage the impression that the benefits of irrigation are confined to growing better crops in fields under the ditch. This is the initial advantage, of course, but far from the only one. There are the factories which process the products made possible by irrigation water, and the stimuli which attend these industries are felt by the entire community. Then there is the stabilizing effect which irrigation projects lend to dry farming areas alongside of them. And there is the finishing of livestock on irrigated feed and the by-products from the factories.

The livestock feeding industry in Southern Alberta has assumed major importance not only to the district but to all Canada.

Before irrigation there was practically no finishing of livestock in Southern Alberta. Now, the production of choicest carcasses is one of the greatest industries in the irrigation regions. These regions supply all the feed for finishing . . . and in turn are made more productive by returning the manure to the soil. Livestock feeding, moreover, provides profitable winter employment for labour, not to mention the fact that by finishing the animals for market, the community realizes more of the ultimate return from the livestock.

Farmers of Southern Alberta annually market some 110,000 head of fat cattle. Of this figure at least 50,000 are fattened each winter in the sugar beet areas. Southern Alberta markets 168,000 lambs and sheep annually. Up to 100,000 lambs are fattened on the feedlots in the irrigation districts on alfalfa, grain and sugar beet pulp. Add to these impressive totals 175,000 hogs which are readied for market every year from the same district, and you must agree that producers in Southern Alberta have made the best use of their opportunities. Their contribution to the food store of the world and to the national economy is second to none.





FARM INCOME

AS TYPICAL EXAMPLES of income returns from irrigated farming areas, let us consider these two districts. The first is the Taber Irrigation District comprising some 25,000 acres east of Lethbridge, and the second is the Lethbridge Railway Division itself. Figures given are for 1945 in both cases.

Taber Irrigation District

Sugar Beets	\$1,044,687
Wheat	146,475
Coarse Grains	220,500
Canning Crops	170,983
Alfalfa	64,800
Pickle Crops	20,250
Commercial Gardens	80,000

TOTAL \$1,747,695

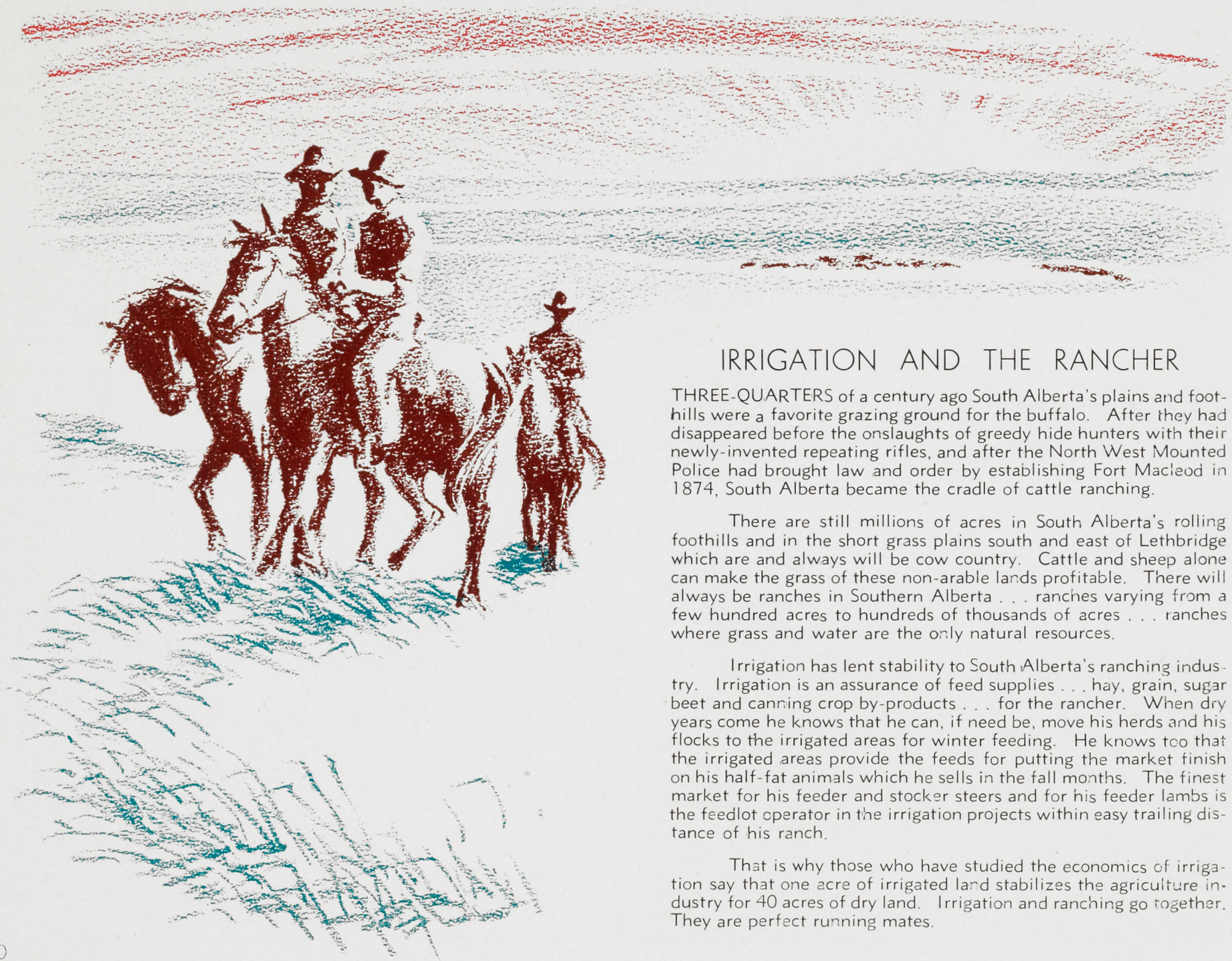
The average income per acre in this district was \$87.75 for that year.

Lethbridge Railway Division

Wheat	\$24,700,000
Other grains	8,603,000
Canned goods	1,500,000
Dehydrated vegetables	56,000
Cattle and hogs	9,000,000
Sheep and wool	4,000,000
Hay and feed	6,000,000
Poultry and eggs	2,500,000
Dairy products	2,500,000
Sugar	6,900,000

TOTAL \$65,759,000





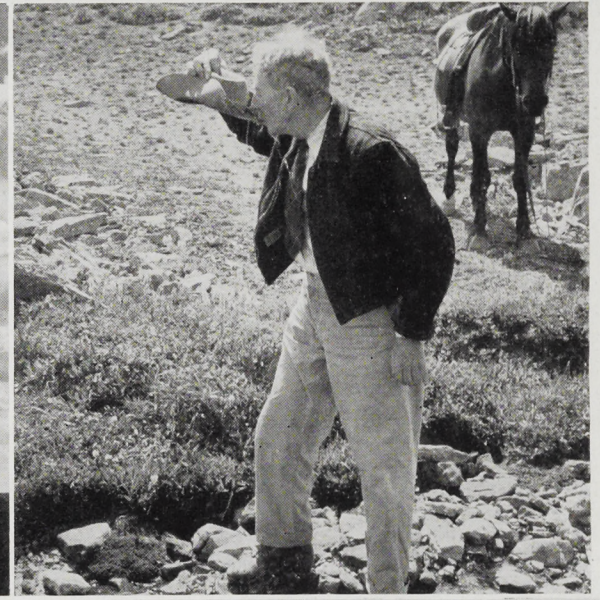
IRRIGATION AND THE RANCHER

THREE-QUARTERS of a century ago South Alberta's plains and foothills were a favorite grazing ground for the buffalo. After they had disappeared before the onslaughts of greedy hide hunters with their newly-invented repeating rifles, and after the North West Mounted Police had brought law and order by establishing Fort Macleod in 1874, South Alberta became the cradle of cattle ranching.

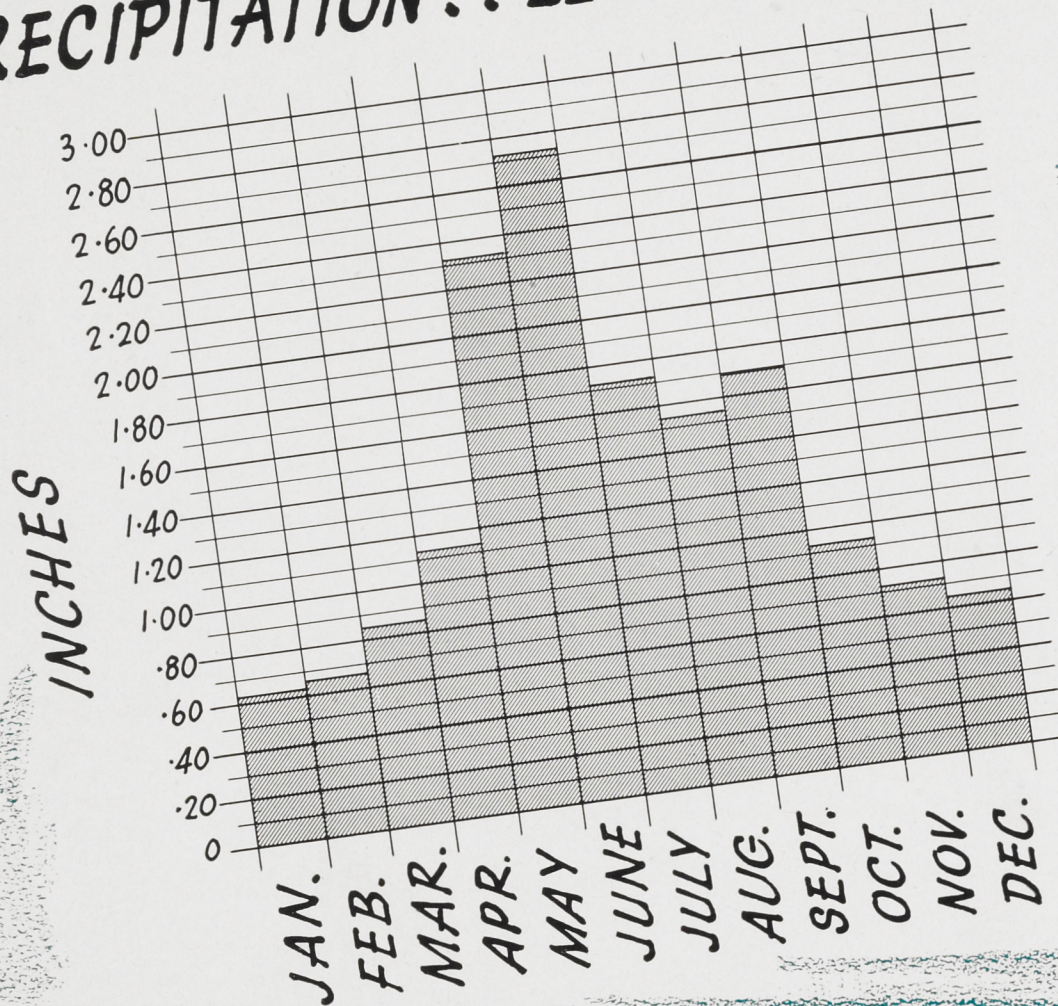
There are still millions of acres in South Alberta's rolling foothills and in the short grass plains south and east of Lethbridge which are and always will be cow country. Cattle and sheep alone can make the grass of these non-arable lands profitable. There will always be ranches in Southern Alberta . . . ranches varying from a few hundred acres to hundreds of thousands of acres . . . ranches where grass and water are the only natural resources.

Irrigation has lent stability to South Alberta's ranching industry. Irrigation is an assurance of feed supplies . . . hay, grain, sugar beet and canning crop by-products . . . for the rancher. When dry years come he knows that he can, if need be, move his herds and his flocks to the irrigated areas for winter feeding. He knows too that the irrigated areas provide the feeds for putting the market finish on his half-fat animals which he sells in the fall months. The finest market for his feeder and stocker steers and for his feeder lambs is the feedlot operator in the irrigation projects within easy trailing distance of his ranch.

That is why those who have studied the economics of irrigation say that one acre of irrigated land stabilizes the agriculture industry for 40 acres of dry land. Irrigation and ranching go together. They are perfect running mates.



42-YEAR AVERAGE MONTHLY PRECIPITATION.. LETHBRIDGE



AN ACRE-FOOT
OF WATER
IS 43,560
CUBIC FEET

SPECIALTY CROPS

WHILE WE HAVE GIVEN considerable attention to sugar beets as the principal crop in the irrigation districts of the South, we must not neglect other special crops, which after a scant dozen years, now put a million and a quarter dollars into the pockets of the farmers every year. That's a nice return and marks what is presumably the initial stage in the development of this type of production.

By special crops we mean seeds and canning vegetables and pickles. There is a great variety of soils in the South which lend themselves to the growth of seed crops, and already the Province is leading in the production of many varieties of cereals, grasses, clover and other legumes, including peas and beans, as well as mustard and rape seed. Seed growers are supremely confident of the continued growth of their business.

As one example of returns which can be expected, the average yield of peas in Southern Alberta is 1,200 pounds of cleaned seed per acre, with some farms going as high as 1,900 pounds. Prices for the seed range from 5 to 6½ cents per pound.

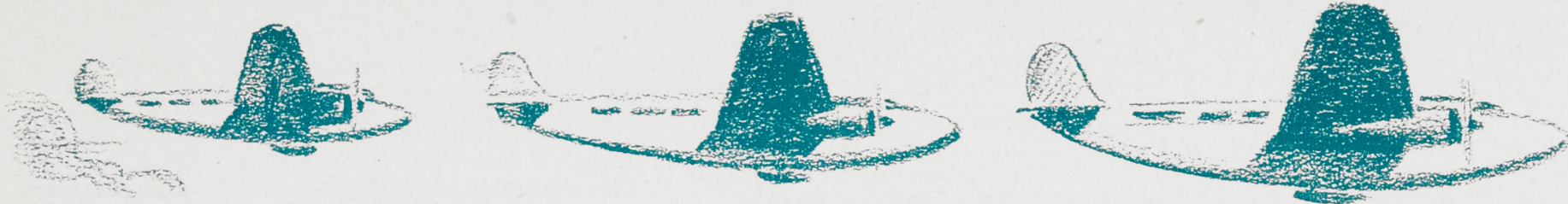
Market demand for canned vegetables grown in the irrigated districts is strong throughout Canada and in addition, a substantial

tonnage of canned pumpkin is shipped to the United States every year. Starting in 1934, when the first vegetable cannery was built at Taber, the canning industry now has twelve successful seasons behind it. Vegetables canned include peas, corn, beans, red table beets, diced carrots and pumpkin. An even newer venture is in the field of cucumbers for pickling. A nationally known pickle manufacturer is now established in the district and great expansion is anticipated. The cucumber yield is high and cucumbers are of ideal size and quality. Great opportunities exist in this specialty crop.

Speaking of corn, this crop fulfils a fourfold purpose, not all of which has been realized to date. First, the vegetable is canned for table use. Secondly it forms the basis of alcohol production. Thirdly it produces syrup of exceptional quality. And lastly the cobs and stalks provide the raw material for the manufacture of plastics. In regard to the last, a simple, low-cost process developed by Dr. O. R. Sweeney, is available for the use of this great industry, and we might add that in what might be called the plastic age, the availability of this raw material in unlimited volume is of tremendous importance. Incidentally it is true that the Taber district of Southern Alberta yields the highest tonnage of corn per acre in all Canada.

What more need be said?





TRANSPORTATION

SOUTHERN ALBERTA is well served with transportation facilities.

Look at your railway map and you will find that from the Canadian Pacific main line at Medicine Hat a secondary main line branches off which runs through Lethbridge, the Crow's Nest Pass, the Kootenay country with its minerals, its timber and its fruitlands, and on to the Pacific terminus at Vancouver.

Lethbridge, in the heart of the irrigated area, is the centre of a network of branch lines of the Canadian Pacific—to Medicine Hat, to Crow's Nest, to Calgary via Macleod and to Calgary via Aldersyde; to Cardston and Glenwood, to Coutts on the Montana border, to Foremost and on through Weyburn, Sask., to Winnipeg by a southern route and through the Lethbridge Northern Irrigation District to Turin.

Main highways parallel all these railway branches and these are served by Canadian Greyhound, Lethbridge Northern, Alberta-Montana lines and other bus transport. Many truck lines also serve the territory.

South Alberta is fortunate too in being served by the main line of Trans-Canada Air Lines. Lethbridge's Kenyon Field, a 1,000 acre airport five miles south of the city, is one of the finest airports in Canada. Four transcontinental flights each way daily set down at Kenyon Field, while four flights north and south, each way, serve Northern Alberta points. In addition, Western Air Lines of Los Angeles give direct daily connections with Los Angeles, Salt Lake City, Denver and Texas points and to Minneapolis and Chicago.

South Alberta was the airmen's paradise during the second great war with airports and schools for training of air crew located at Lethbridge, Medicine Hat, Pearce, Macleod, Claresholm, Vulcan, DeWinton, and High River, all south of Calgary. Feeder airlines making use of these established airports are a natural development for the future.





DAM ON ST. MARY

WORK HAS BEGUN on the highest earth dam so far undertaken in Canada. Located on the St. Mary River six miles northwest of Spring Coulee, the new development will provide irrigation water for 345,000 fertile acres which until now have been handicapped by the lack of sufficient moisture to produce their full measure of wealth. The area will extend south and east of Stirling and Raymond to the Saskatchewan boundary and to the districts around Taber, Purple Springs, Grassy Lake and Seven Persons, all south of the South Saskatchewan River.

The St. Mary project will create a main reservoir some 17 miles long and six miles wide. This will hold 300,000 acre-feet of water, while nine other reservoirs will store an additional 467,000 acre-feet.

The dam itself will be 185 feet high over the river channel and a half mile long at its crest. Width at the foot of the dam will also be half a mile. Over five million cubic yards of earth, gravel and rock will be moved to build it. For waste water during flood periods and to divert the stored water into the main canal, two tunnels, each 20 feet in diameter, are being cut through half a mile of solid rock.

Engineers with international experience are in charge of construction of the dam. Under their watchful eyes gigantic Letourneaus and bull-dozers are handling the earth fill, sprinkling and compacting it in great layers.

The water face of the dam will have a three-to-one slope,



covered with coarse sand and gravel one foot thick at the crest, increasing to ten feet at the base. This in turn will be covered with ten feet of riprap.

Although the St. Mary dam must not be considered as an employment project, it is of interest to note that its construction will require the effort and skill of 600 men over a period of three years. The entire project will require a permanent force of 175 men.

Now a word about what the finished project will mean to Southern Alberta. Due to the resultant increase in the carrying capacity of the land, it will mean, first of all, that population density will jump from 3.59 persons per square mile to 42 and up. This means in turn that close to 25,000 more people will be able to enjoy an abundant life in the area. It will mean also the construction and operation of new factories, packing plants, canneries, woolen mills and other essential industries. It will mean greater supplies of food-stuffs for an eager nation. It will mean the construction of at least 2,300 new farm unit buildings, and a further 2,000 new homes and businesses in new urban centres. Hundreds of factory items for each farm and home unit, such as tractors, trucks, farm machinery, refrigerators, washing machines, plumbing and electrical supplies and furniture are needed for the new development, all of which will run into the millions of dollars every year.

In a word, the St. Mary project and all it entails will mean a substantial stimulus to the economy of the entire nation. It will mean, above all else, greater opportunities in the business of living.

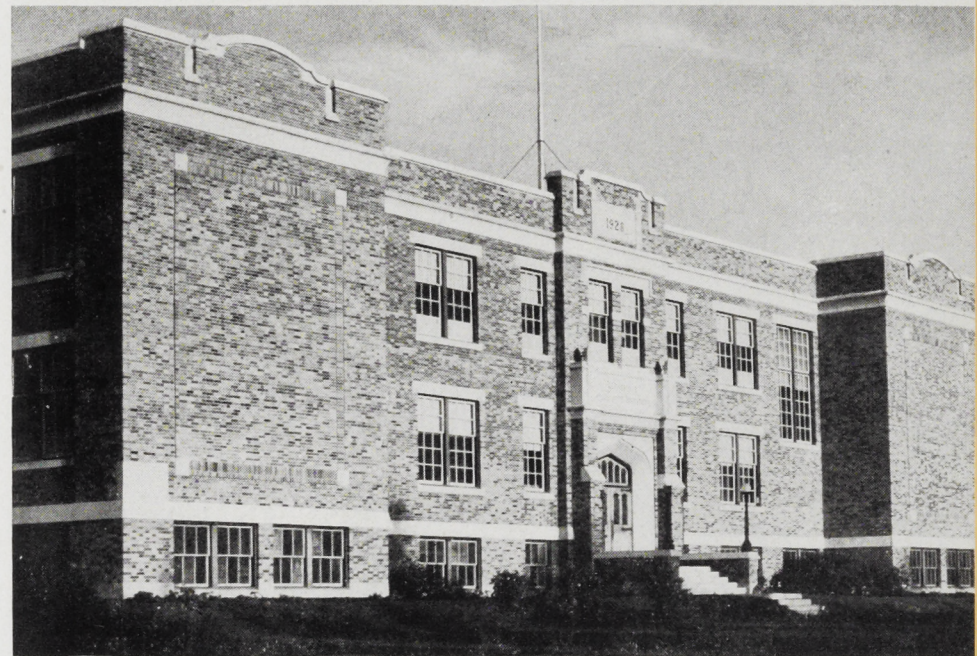


LET'S BE SPECIFIC

WE'VE BEEN DEALING with the stage of progress actually reached in this great land of Southern Alberta. We've also mentioned the future development of the country, which with the mere passage of time, is inevitable. And we have referred several times to opportunities which are involved in this inevitable development. Now we propose to tell you something of what lies in store for the thousands of people who are going to take advantage of those opportunities.

First of course are the opportunities awaiting the settler on land which is being brought under irrigation. Hundreds of thousands of new acres will turn green when the magic of water touches the soil. This means farming at its best, with the hazards of weather largely eliminated and an assured profitable market for your produce. The increased population in the new districts means opportunities for new businesses. Butchers and bakers and all the rest will be needed to supply the wants of these districts.

Canadians need more sugar. New sugar factories will be built to supply the demand and greater quantities of tops, pulp and molasses, as well as grains and hay, will be available to feed larger numbers of livestock. Already fattening some 50,000 head of beef cattle, 100,000 lambs and 175,000 head of swine each winter, the producers of the south may well double this quantity.





This activity, now an integral part of the economy of the irrigated districts, indicates the need of a meat packing plant or two. Again, as leading producer in Canada of high quality wool, the South can and will support greatly extended facilities for weaving blankets and cloth.

Milk condenseries and creameries, cheese factories and egg and poultry stations are all needed even now and as progress is maintained, more of them will be required.

New canneries for processing vegetables are coming, but more will be needed. A glucose factory will find plenty of raw materials available and a ready-made market will await the enterprise. Plastics made from by-products now largely unused hold promise of a great and growing industry. And there are as many more which we shall not mention here, but each of which may be classified as solid, stable industries.

All the above refers primarily to industrial expansion for which capital must be found. On the other side of the picture, how about the man or woman seeking employment? It takes no imagination to visualize the thousands of jobs coming up. Whatever your skill or your desire, it can be used and satisfied . . . in Southern Alberta.

For here is the new frontier of progress. Here is the rich, radiant young region beckoning those who seek security and more abundant living. Here, in a word, is Opportunity.

Ladies and gentlemen, choose your future.



CONTRIBUTORS

THESE ARE THE INSTITUTIONS and concerns whose contributions have made publication of this booklet on irrigation in Southern Alberta possible:

Government of the Province of Alberta (Department of Economic Affairs)

The Canadian Pacific Railway

Trans-Canada Air Lines

The City of Lethbridge

Alberta Clay Products Company Limited, Medicine Hat, Alberta

Alberta Pacific Grain Company (1943) Limited, Calgary, Alberta

Alberta Wheat Pool, Calgary, Alberta

J. H. Ashdown Hardware Company Limited, Calgary, Alberta

Bank of Montreal

Bank of Nova Scotia

Bird Construction Company Limited, Winnipeg, Manitoba

Broder Canning Company, Lethbridge, Alberta

British Canadian Trust Company, Lethbridge, Alberta

Burns & Company, Calgary, Alberta

Calgary Power Company Limited, Calgary, Alberta

Canada Packers Limited, Toronto, Ontario

Canadian Bank of Commerce

Canadian Sugar Factories Limited, Raymond, Alberta

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S. S. Kresge Company Limited, Toronto, Ontario

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HOW WE LIVE



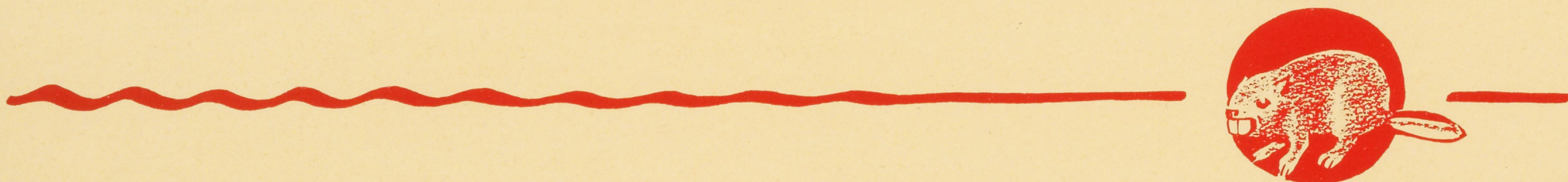
AND PLAY . . IN



IN SOUTHERN ALBERTA



DAM *the* WATER!







LETHBRIDGE.
ALBERTA.

Last Note

No doubt you have friends who are interested in learning more about irrigation in sunny Southern Alberta. Then why not have a copy of GREEN ACRES sent to them? Simply mail us their names and addresses and we shall forward their copy without cost or obligation.

THE HERALD JOB DEPARTMENT
LETHBRIDGE, ALTA.

